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Public Health Yesterday, To-Day, and To-Morrow*

M. R. BOW, M.D., D.P.H.

*President of the Canadian Public Health Association
and Deputy Minister of Health, Province of Alberta*

IT is fitting, when the Canadian Public Health Association is holding its twenty-sixth annual meeting in the national capital, that consideration should be given to the national significance of public health. A study of the British North America Act makes it clear that the framers of our Constitution regarded health in the main as an activity and responsibility of the various provinces, but we know to-day that until we look at and deal with the problem from a national viewpoint, we will never achieve the position that we can and should achieve in the maintenance of a high standard of health for all our people. The field of public health has expanded greatly since 1867 and is still expanding. What was not even dreamed of seventy years ago is now accepted without question. Diseases such as smallpox and diphtheria, which were scourges seventy years ago, have now been practically eliminated in all communities applying the means of prevention which science has given us. Typhoid fever has been reduced from an annual scourge to a disease which to-day occurs only sporadically in any community properly safeguarding its water, milk, and food supplies and providing for sanitary disposal of sewage. The death rate of children has twice been cut in two within the last seventy years in communities providing modern health services. The death rate from tuberculosis has been reduced to at least one-third of what it was when the Fathers of Confederation assembled to frame our Constitution.

In spite of these and many other outstanding achievements which time does not permit of enumeration, we have scarcely more than made a good beginning in the application of the knowledge that we now possess. It is not sufficient

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that sickness and death from preventable diseases be eliminated. We must have a much more positive public health program. We have done relatively little for those over forty years of age. Cancer, diabetes, diseases of the heart and arteries, accidents, and many other causes of death which annually account for a terrific toll of human life and an ever-increasing extent of disability are but a few of our unsolved problems. The problem of the large population group which is totally unable, on account of economic reasons, to take advantage of available health services and whose physical and mental fitness is so definitely impaired is another great problem demanding solution.

When we speak of the undeveloped resources of Canada we think of our mines, forests, lands, and the other great resources with which our country is so richly endowed, but the health of our people, on which the whole future of our country depends, is seldom even mentioned as one of these resources. We can ill afford, from any point of view, to delay longer the general application of those methods which science has placed in our hands and which, it has been demonstrated over and over again, when properly applied return dividends in physical and mental fitness out of all proportion to the sums invested for this purpose.

Humanity is on the march. The movement for the equalization of opportunities for health is but a part of the onward march of man to individual, national, and ultimately international security. It is true that many false notions still persist and, like the prophet of old, we sometimes wonder why these remain to try us. Fear of the unknown, of what the future holds for us as individuals and as a nation, has held us in its grip. Fear is to-day exacting tribute from the nations of the world to the extent of ten thousand million dollars a year—the expenditure for armaments. Sensible people realize the madness of a world in arms but, until we can get some clear understanding and appreciation of social values by people of all races, there can be no security for any individual or any nation. What a price we are paying in health and physical efficiency both as individuals and as nations because of our subjection to fear! What could be accomplished in making freely available to every individual the more abundant life, if even one-half of these ten thousand million dollars were available for the development and extension of modern health services. If we could get universal endorsement of a policy which would require the expenditure of one dollar for scientific health services for every dollar expended on armaments we would do more, not only to raise the standard of health in all nations but to banish the spectre of war, than could be accomplished by almost any other means.

Although the health sky is often darkened and the health horizon dim and undefined, our failure to see it is frequently due to our own near-sightedness. There is an increasing understanding by the people of the vital need for the fuller application of existing knowledge. Unless we are prepared to give leadership and direction to the movement for better health, or shall I say to the movement for the equalization of opportunity for health, then we will inevitably find that leadership will be found in other places and the whole progress of the cause of public health will suffer.

May I now briefly draw your attention to eight major health problems facing us to-day irrespective of the particular section of Canada in which we live. While some of these problems have been faced and dealt with efficiently either in whole or in part in some parts of Canada, nevertheless the general situation is still one to challenge the best thought and effort of every Canadian with the interests of his country at heart.

Housing

The earliest public health work was done in the field of sanitation. While there is still a tremendous work to do in this field, particularly in the smaller towns and rural districts, to-day we consider that any community which has failed to make proper provision for a safe water supply, a safe milk supply and proper sewage disposal, is derelict in its duty. In fact, the courts have held quite properly that such a municipality is negligent. But what are we to say of the housing situation which exists in Canada to-day? What is our attitude to our slums, both rural and urban? How long will we continue to tolerate housing conditions that are a disgrace to our civilization? If our ideal is a full measure of physical and mental health for all, then the housing problem ought to be one of the first to receive attention. We cannot build a sound health structure on a foundation of insanitary housing.

Maternal and Child Hygiene

In spite of the marked improvement in our infantile mortality rate and the less satisfactory improvement in our maternal mortality rate in recent years, we have still a long way to go before we can feel satisfied that we have provided our mothers and children with those conditions which will insure their health and general well-being.

In 1935, in the nine provinces of Canada, 1,093 mothers died as a result of conditions associated with childbirth and 15,723 children died within the first year of life. It is quite conservative to say that both our infantile mortality rate and our maternal mortality rate could be cut in half if we applied fully our present knowledge. We are paying a high price for our failure to face realities in the field of maternal and child hygiene.

Cancer

Cancer was responsible for 11,150 deaths in Canada in 1935. The tremendous toll of life levied by this disease has brought it into focus as one of the greatest of our public health problems. One out of every 6.5 persons forty years of age and over whose deaths are registered in Canada each year, dies from cancer. Cancer has an almost regular schedule for its appearance in the human body. As has been pointed out by an authority in this field, it selects its victims. As in everything else there are variations, but observation has proved that most of the cancers of the mouth and throat occur in men past fifty, cancers of the stomach in either sex usually appear between the ages of thirty-five and sixty-five, cancers of the uterus during and after change of life.

If progress is to be made in the prevention and control of cancer, and the knowledge we now possess is to be applied, the public must be educated and made to realize that this problem is an individual problem and that on the intelligent co-operation of each individual depends his chance to escape death from this cause. The psychology of fear has stood in the way of progress. Fear must be dispelled and people everywhere must be informed as to the nature of the disease and the vital importance of early recognition and prompt and effective treatment.

Mental Hygiene

During the Great War, Mr. Lloyd George made a statement to the effect that you cannot build an A1 nation out of a C3 population. We have at last begun to realize that the quality of our human stock is a matter of tremendous importance to the state.

It has been estimated by psychiatric authorities that four per cent. of the children in school will ultimately find their way into mental institutions or suffer breakdowns from mental disease unless steps are taken to find these children and provide the necessary adjustment of their environment and their mode of life that will prevent many of such breakdowns. Many forms of mental disease are associated with definite hereditary predispositions. The early detection and intelligent treatment of persons with such inherited tendencies are of primary importance. In most cases of mental disease, however, the social environment of the individual, the stresses and strains to which the personality has been exposed also play an important part. The minor fears and jealousies, the prejudices and uncertainties which hamper us all are of much the same stuff as that of which mental disease is made. In certain instances they may lead to serious and definite disease, in other cases continue as handicaps in our daily lives, but they may usually be overcome so as to lead to the development of a stronger and saner personality. Most significant of all is that we realize the importance of mental hygiene in childhood, for it is then that the emotional twists which may warp and distort the whole personality in later life are received.

It is generally recognized to-day that a mental hygiene clinic organized to study and treat the behaviour problems of children is an essential part of a public health program. Such a mental hygiene program can be made available in our rural districts only through the organization of full-time district health units conducted along similar lines to those now operating in several provinces. Through such units, not only mental hygiene clinics but the whole preventive health program which is recognized as essential in the maintenance of health can be made available.

Syphilis

Syphilis was once referred to by Sir Wm. Osler as the most universal of all diseases. A vigorous drive against this disease has recently been launched by Dr. Thos. Parran, Surgeon-General of the United States Public Health

Service. This campaign has served to focus the attention of public health authorities and the general public on the necessity of taking vigorous action in dealing with a disease which, although preventable, has plagued mankind for centuries. While the downward trend in the death rate from syphilis in recent years is encouraging, the toll of life and disability it still exacts year in and year out marks this as a public health problem of major importance. In the year 1935, the most recent year for which data for Canada are available, approximately 704 deaths were attributed to syphilis, locomotor ataxia and general paralysis of the insane. This figure does not, however, indicate the toll exacted by these diseases. Syphilis as a cause of death is greatly understated on death certificates. It is probable that, if all deaths due to syphilis were reported as such, the annual total would be not less than five times the above-mentioned number.

It has been estimated by authorities that an average of one out of every ten adults will be infected by this disease at some time during his or her life. Wassermann surveys in healthy groups of wage earners have shown that from one to sixteen per cent. were infected with the disease. The great wastage of human life and human disability due to this disease could be markedly reduced if the prophylactic and therapeutic measures now generally available were more widely used. The experience of the Scandinavian countries gives eloquent testimony to the value of a determined drive against venereal diseases. In Stockholm, for example, in 1919 there were about forty-four new cases of syphilis per ten thousand population. In that year an anti-venereal program was put into effect, and at present their rate is approximately two new cases per ten thousand population.

Methods of control of syphilis are well established; facilities are available for treatment in most centres, and where lacking can be readily established. While the information essential for control is available, the general public is not yet ready to go the full way in the application of our present knowledge. Syphilis must be brought out into the open and fought in the same way as tuberculosis, for example, which has been fought with such successful results. The fight against syphilis involves the correction of many faulty social conditions and it is safe to say that when the public fully realize the seriousness of the problem we shall record a further advance in the prevention and control of syphilis.

The Lack of Preventive Health Services in Rural Districts and Small Urban Centres

I would feel that I had been remiss in my duty if I did not call attention to the inequality that exists in so far as modern preventive health services are concerned as between the citizen who resides in a city in which modern health services are available and the citizen who resides in a rural area or small urban centre in which no such service is provided. The town or village, as well as the single rural municipality, is unsuitable as a unit of government in dealing with the health problems of to-day. The organization of health work by the

establishment of county or district health units serving all municipalities embraced in such units, is the solution of one of the real health problems facing us, namely, making modern preventive health services available to the residents of our rural districts and smaller urban centres. In such a set-up it is essential that the medical officer of health, as well as the nursing and sanitary inspection staff, should be a full-time employee, should be properly trained and adequately remunerated. The Provincial Department of Health should act in a supervisory and advisory capacity and a staff of properly qualified supervisors should be maintained to insure that the local health service is maintained at a high level of efficiency. Federal and provincial financial assistance should be extended on a per caput basis.

Decentralization is an essential feature of an effective health service. While there may be certain circumstances and some problems with which the central health authority can deal more effectively, generally speaking the people to be served must have a personal interest in and direct responsibility for the type and quality of service they receive. In my opinion no more effective contribution to the health of the citizens of Canada could be made than by providing such federal and provincial financial assistance as would insure the establishment of these full-time preventive health units throughout our country.

Health Insurance

With the progress in the development of what we sometimes term "mass" public health work during the last twenty-five years, the problem of the future has been revealed as that not only of maintaining mass health but of instituting a program which will insure the fullest measure of personal health for the individual citizen. The widespread interest in the subject of health insurance to-day is an indication that the health educational work carried on by the medical profession and official and unofficial health agencies in recent years is beginning to bear fruit in a public demand that the barriers to health be removed and that every citizen be given the advantage of modern facilities for the maintenance of health.

Health insurance is a subject which is being widely discussed to-day. In my opinion it is of vital importance before any system is devised and put into effect that it be given the most careful study and thorough trial in one or more local units for the purpose of demonstration, in order that we may make certain not only that the system proposed is sound from the economic point of view but that it will operate to provide scientific medical and health service of the highest standard. It is my opinion that the wise course to follow is for federal and provincial authorities to collaborate in working out a plan by which a few such units would be established in representative areas. These should operate for a period of at least five years, by which time we would have secured the information on which a sound system might be based.

One of the most significant developments in recent years was the enactment of legislation known as the Social Security Act by the United States Congress in 1936. Dr. E. L. Bishop, Director of Health, Tennessee Valley Authority,

and an outstanding public health authority, made the following statement concerning this legislation in a recent address delivered before the Kentucky Conference of Social Work:

"For the first time the federal government appears to recognize its relative responsibility for leadership and the equalization of public health opportunities, but even more significant than the financial index is the association of health security with the whole program for social security. We now have basic federal policy in public health, a policy based upon co-operative action with the States. . . . Each of the three units in government—federal, state and local—is putting forth its effort as a part of the team. The program is fundamental. It marks an epoch in public health history. In fact this most recent crystallization of public thought into public policy and action affords a challenge to our own intelligence as professional workers in meeting immediate opportunities. Will we, whether specialists in public health, practitioners in medicine, or social scientists, permit perception of existing needs by the public earlier than we ourselves perceive them? I hope and believe we shall lead rather than be driven."

There is great need in Canada for similar legislation to that of the Social Security Act of the United States. If our public health problems are going to be dealt with in a sound, orderly and scientific manner we must have, in the first place, recognition that the problems of public health are national in their significance; and in the second place that in their solution there must be not only national direction and leadership but the fullest understanding and co-operation of all health agencies whether local, provincial or federal. To this end let us earnestly direct our efforts so that we may give to all our people the full measure of health to which they are entitled.

Some Aspects of the Management of the Diabetic Patient

W. R. CAMPBELL

*Department of Medicine, University of Toronto, and the Medical Service,
Toronto General Hospital*

THE title of this paper is intended to remind us that we are dealing with a living patient confronted with the problem of living under handicaps which increase with the severity of his disorder. It is useful sometimes to lay the emphasis on the patient rather than on his affliction. The management of the patient is also a much more inclusive subject than the treatment of diabetes, much more important to the patient, and must be discussed in more general terms. It includes any and all measures which may be invoked to prevent and alleviate mental and physical deterioration of diabetic individuals.

Diabetes is a controllable disorder of metabolism. The fact that it is controllable deserves much more emphasis than it has received. Unfortunately, in the minds of the laity and, too often, in the minds of the profession, it is regarded as an incurable disease progressing, late or soon, to a fatal termination. This attitude of mind has disastrous results which cannot be neglected. Patients who regard themselves as afflicted with an incurable disease are apt to think of themselves as foredoomed. Their morale is destroyed and with it goes that spirit of co-operation with their medical attendant which is so essential for the adequate control of their condition.

However much this attitude of mind may have been justified in former days, in recent years our knowledge of the disorder has advanced so far as to make it possible to prevent the evil consequences of untreated diabetes. Indeed, patients with diabetes may live healthy and useful lives even though they are somewhat handicapped by this disorder of metabolism, and not a few have proved by their achievements that, in comparison with others, they need not stand ashamed. The physician should not only bring the metabolism of the patient under control but, in addition, he should train him in the methods of overcoming the handicaps of his disorder as well as inculcating the modern attitude toward this condition.

If one were considering only the treatment of the disorder of metabolism, it would be easy to formulate ideals of successful treatment. These ideals may differ in the minds of different physicians, but all would agree that the possibility of cure of the condition is, at present, remote. To me these ideals include the restoration of the individual as an economic asset, a sufficiency of food on which to live and to work, and restoration of the derangements of metabolism to, as nearly as possible, the normal physiological state. The last would include the abolition of glycosuria, ketosis, and hyperglycaemia. The hyperglycaemic, aglycosuric diabetic is merely a little less diabetic than when he is excreting

sugar in the urine. A limitation of total calories, it is pretty generally agreed, is necessary in these patients. For those unable to metabolize sufficient food, a deficient endogenous insulin production may now be supplemented by insulin derived from animal sources. With regard to the composition of the diet there are some differences of opinion. It is certain that two-thirds of a gram of protein per kilogram of body weight is adequate and that one gram is ample, except in children or those who are undernourished, for whom the amount should be larger to allow for growth and restoration of physical fitness. The fat and carbohydrate allowance should vary with circumstances peculiar to the patient. Four main types of dietary treatments are in use or under investigation in our clinic: (1) The under-nutrition type, in which calories, fats and carbohydrates are relatively low, has particular value in building up tolerance and in reducing the weight. (2) The intermediate type in which moderate restriction of both fats and carbohydrates is prescribed is a valuable method of treatment provided the patient is only moderately deficient in carbohydrate tolerance and can still metabolize sufficient food to use an adequate number of calories successfully. (3) The so-called high fat, low carbohydrate diet is used for patients who require higher calories but whose carbohydrate tolerance is low. These three types of diet have been in use for sixteen to twenty years. (4) In the past nine years a considerable amount of investigation has been carried on in our clinic with the high carbohydrate, low fat diet originated in the Wenkebach clinic in Vienna by Porges and Adlersberg, popularized in slightly different form by Sansum in America. No attempt will be made to define the value and limitations of these methods, though it may be said that the last has been least effective in accomplishing the objects of treatment previously mentioned.

When dietary restriction is insufficient to accomplish our ideals in diabetic treatment, insulin may be added to that treatment. It must be administered hypodermically and preferably a short time before a meal as, in this way, it counteracts the hyperglycaemia caused by absorption of carbohydrate. The dose required can be gauged from the glucose excreted on a known diet, or repeated increments may be made to the dose until the patient becomes sugar-free and normo-glycaemic. At the present time newer insulin compounds with enhanced efficiency and prolonged action are appearing. They make possible treatment by a single daily morning injection, and for routine daily treatment of chronic insulin insufficiency they are more effective than unmodified insulin and represent a great advance in diabetic therapy. When rapid action is required, however, as in acidosis, coma, infections or surgical intervention, the unmodified product is superior.

Every patient using insulin should be required to learn its properties, how to administer it, the signs and symptoms of overdosage, and the means of cure of overdosage. The latter consists in increasing the supply of available glucose in the blood. Administration of corn syrup, glucose, candies or orange juice by mouth or, if unconscious, the intravenous administration of glucose solution is effective. Every now and then a doctor encounters an unconscious diabetic

and administers insulin to him after insufficient investigation. Serious consequences may arise if the patient is already in hypoglycaemic reaction. An intravenous injection of 20 c.c. of 50 per cent. glucose is much to be preferred if one is in doubt about the diagnosis. In ten minutes the patient will be well if he was suffering from hypoglycaemia, but nothing will be lost if he is suffering from diabetic coma.

Acidosis and coma are much better prevented than treated. They occur among the untreated, the infected, the neglectful and the neglected diabetic patients, and may be largely avoided by educating the patient. Prompt action is essential. The immediate administration of 60 units of insulin is of more value than thrice as much two hours later. Subsequent treatment is, primarily, the administration of more insulin with heat, fluids, rest in bed, glucose and alkalies, but this need not be discussed further here.

Importance of Strict Treatment

I wish, however, to direct your attention to two important preventive aspects of the management of diabetes. The first of these is early strict treatment or strict early treatment, as you will. The patient with early diabetes presents the greatest and, I fear, the most neglected opportunity to the physician. Too often he is loosely treated by the so-called qualitative restriction method. This really consists of doing practically nothing but telling the patient to eat only a little of this and not so much of that and resting content with a moderate and, unfortunately, temporary reduction in the glycosuria. The diabetes inevitably progresses and the patient loses tolerance. It seems difficult to make the physician appreciate the difference a few additional grams of carbohydrate tolerance can make in the life of the patient. On the other hand, with strict early treatment the carbohydrate tolerance of the patient is conserved and, in a considerable proportion of cases, enhanced. The diabetes appears to grow milder as the years pass by. Unfortunately, carelessness is a very human failing and this brings me to the second point I wish to emphasize, namely the necessity for continuous control. It applies not only to the treatment of the mild diabetic, but to that of all diabetic patients. It matters little which type of diet you have instituted, if the patient does not adhere to it. Training the patient in a knowledge of his condition and how to control it, how to make up his menu so as to get the most satisfaction from it, the importance of glycosuria and acidosis and the measures used to combat them, the measurement, administration and effects of insulin, its dangers and how to overcome them, all are features of the education of a diabetic which diminish his handicap. Many physicians will not teach the tests for sugar and ketones to their patients, fearing to alarm them excessively or to make them introspective. In few is the fear justified, provided they are introduced in the right way, that is: as a mode of control, made part of the patient's responsibility in the treatment of his disability. Repeat visits by the patient to his physician are essential in exercising adequate control. The blood can be obtained for sugar estimation—a finer degree of control than the patient possesses—the patient's problems and progress can be

discussed with him, useful variations in the diet suggested, check urinalyses performed, and the needed hint to beware of words of commendation judiciously uttered, which tend to strengthen the patient's morale. The visit can be made valuable to the patient even when no serious blunder is discovered and there appears to be no necessity for tightening up on the rules.

Diabetic Education

The diabetic education of the patient should be as broad as he is capable of assimilating. Better co-operation may be expected from a patient who can understand the value of and reasons for a therapeutic measure. Only for the few is this plan undesirable since, with comprehension of their problems, there comes a knowledge of how to combat them and an interest in attaining to the best results. A simple primer or guide book is best to start with, supplemented by explanations graded to the individual. Later, some diabetics will become omnivorous readers of all available diabetic literature. With all grades of people there is furnished an opportunity for psychotherapy which should not be neglected, as so much of the patient's happiness depends on his attitude of mind toward his disability. The hopeless, miserable, whining, despondent attitude should vanish with his weakness and emaciation; if not, the patient is being badly managed.

Heredity

Someone has remarked on the wisdom to be exercised in choosing one's ancestors. Heredity in diabetes is a factor to which we have paid too little attention. Recently more and more evidence has been accumulating to suggest that diabetes is hereditary. That diabetes is hereditary in the genetic sense, however, does not mean that the child will inevitably develop the diabetes of his father, but that he possesses the potentialities of developing this disorder of metabolism and, given time and other suitable factors, may develop it. While it does not exclude development *de novo* of sporadic cases, it tends to confine the condition to certain stocks. The acquired character of diabetes is probably never inherited. Provided that the diabetic stocks do not become too prolific, the spread of the defect through the race is likely to be very slow. Perhaps before it becomes a serious menace we shall have become sufficiently enlightened to do something about it. Since they have the opportunity of inheriting like genes, it is important to regard the relatives of diabetics as potential candidates for diabetes provided the time and environmental factors become suitable, and to protect them as far as possible from the development of this disorder. The same factors which may cause a latent diabetes to develop in those with a hereditary tendency may likewise operate to make a frank diabetes more severe. As diabetes is a disorder of metabolism the first place to look for these factors will be among those which may conceivably throw additional strain on an insulin-producing mechanism. One thinks first of the endocrine glands. Evidence as to an inter-relationship between these glands is not lacking and, on occasion, a definite correlation with an over-activity of certain of these glands, notably

the pituitary and thyroid gland, is to be found. Suitable treatment of the original or complicating disorder may improve the diabetic condition or perhaps inhibit its development.

Obesity

Obesity is a potent factor in bringing out a latent diabetic taint. A large proportion of those acquiring their diabetes in middle age have a preceding history of, or are still suffering from obesity. The carbohydrate tolerance of the obese diabetic is often high and can be enhanced by a reduction cure. That of the patient who formerly was obese but has latterly become lean is usually much more limited and does not improve so readily. Early and efficient treatment directed at both the diabetes and the obesity is in order. If the heredity factor is of such importance as we have recently become inclined to believe, it would seem of particular importance from the preventive standpoint to combat obesity in the relatives of diabetics, since among these we find the largest number of new cases of diabetes developing.

Pregnancy

Pregnancy should be avoided by the diabetic patient. Not only is there a chance that the offspring may become diabetic, but there is a decided danger to the mother. Certainly some diabetic mothers lose tolerance for carbohydrate during and after pregnancy. It may be granted that this does not always occur, but no one should be so deceived as to believe that a permanent loss of tolerance can be completely compensated by the administration of insulin. Acute loss of tolerance leads to ketosis and eventually to coma. A prolonged impairment of tolerance, induced during pregnancy, may be quite as important in the life of the individual as an acute decrease, though the latter is more dramatic. It should be remembered in this connection that the normal pregnant woman is stabilized with a much smaller protection against acidosis than the non-pregnant individual, and the addition of a diabetic or ketonic acidosis requires prompt and vigorous treatment. Diabetes may also show itself for the first time during pregnancy. Commonly it is mild and often disappears after parturition. It then recurs with steadily increasing severity with successive pregnancies, or even without the added strain of pregnancy. Such patients should be regarded from the first as diabetics and moderate dietary restriction, careful attention to focal infections, prohibition of obesity, and other preventive measures invoked. In some instances diabetes arising in pregnancy pursues a malignant course from the beginning.

Several prominent obstetricians have told me that they have never encountered diabetes complicating pregnancy. With the increased duration of life of our juvenile diabetics, marriage and pregnancy is becoming increasingly frequent among them. Termination of pregnancy may be justified on general biological grounds, but we have little evidence to indicate which particular diabetic patient will suffer because of the pregnancy. It is, therefore, better to treat the patient carefully until it is demonstrated that she cannot, with medical assistance, control the progress of the condition. In view of the ten-

dency to liver damage and the intolerance to fat in these patients, it is not advisable to restrict the carbohydrate too severely. Insulin is usually found necessary to maintain the patient free from glycosuria and acidosis. Should the patient be unable to continue the pregnancy without serious danger, a therapeutic abortion should be performed and, with the consent of those concerned, the opportunity of sterilization should not be neglected. Should the pregnancy be safely carried to term, breast feeding of the child should be prohibited on account of the extra strain on the mother's metabolism.

The diagnosis of diabetes during pregnancy should never rest on the presence of sugar in a single chance specimen of urine. Indeed, this should not be the case under any circumstances. The glycosuria indicates the necessity for instituting a thorough investigation, however. As practically every pregnant woman shows glycosuria at some time, and there are numerous causes for this apart from diabetes, it is unwise to alarm the patient without having adequate confirmatory evidence either from the clinical or laboratory side. Repeated positive tests for glycosuria, a clinical symptomatology, ketonuria, evidence of hyperglycaemia and even a more elaborate investigation may be necessary to confirm a presumption of diabetes. Diabetes is not present if, after eating two normal meals, a patient fails to show glycosuria.

Infection

Infection plays an important role in the production of diabetes and in increasing the severity of an established diabetes. While not absent in the older age groups, perhaps its influence is most clearly seen in the juvenile patient. General hygienic measures: vaccinating, toxoiding, isolation from or at least care in daily contact with carriers of disease, suitable clothing, etc., will assist in mitigating the unfortunate influence of infection. Prompt treatment of the diabetic suffering from an infection should be regarded as most essential, and all diabetics should be trained to report even minor injuries or infections to their physician. Focal infections should be eradicated as a preventive measure. If the diabetic patient acquires a severe infection such as pneumonia or one of the acute fevers, apart from any specific measures which may be adopted for the treatment of the complicating disease special precautions should be taken with regard to the care of the diabetes and the possible acidosis which may result. He should reduce his metabolism to a minimum by going to bed and keeping warm. The diet should be light and served in several small meals with liberal fluids with and between meals. Insulin, if already being given, should be divided into several small doses, administered before meals and, if food is not desired at mealtime, it will be necessary to give a small amount of orange juice in substitution. Glycosuria is more difficult than usual to avoid during an infection; but acidosis is more to be feared, and can be avoided by administration of sufficient carbohydrate and sufficient insulin. The efficacy of insulin is reduced during an infection; sometimes also the islet cells of the pancreas may be reduced in efficiency by cloudy swelling or hydropic degeneration. A diabetic patient not ordinarily requiring insulin should be carefully watched for signs of insulin insufficiency and insulin provided if necessary. As recovery

proceeds, signs of insulin overdosage may appear, and the necessary reductions in the amount of insulin should be made.

Surgical Operations

One out of every two diabetics will require a surgical operation during his lifetime. The diabetic should not be denied the benefits of necessary surgical measures because of his diabetes as operations can be undertaken with little more risk than that usual in normal individuals. On the other hand, operations of election should not be lightly decided upon in these patients. Successful results from the medical standpoint are obtained by exercising a constant care and skill in the management of the situation. One thing is of great importance, the choice of the surgeon. Broad experience and a sympathetic understanding of the problems to be encountered in the diabetic are much to be desired. Intimate co-operation can only be obtained if the physician also becomes familiar with the reasons for the particular surgical procedures adopted and the results to be expected. It is often said that diabetics heal badly. This is not true of the modern well-treated, well-nourished diabetic. It is true of the diabetic with *denutrition* as the French call it,—exhaustion of the bodily reserves perhaps expresses it best—and it is true of the diabetic with advanced vascular disease. If possible, rectification of the metabolic disorder by means of diet and insulin should be undertaken first. Early operation is often advisable, however, because of the damage done by infection to the patient's tolerance for carbohydrate, or it may be indicated because of the urgent danger of the surgical condition. In an emergency no delay is necessary. A dose of insulin, sufficient carbohydrate by mouth or intravenously to balance it, and the operation may proceed, the patient afterwards being watched and treated as a possible case of acidosis.

Because of its interference with metabolism, the anaesthetic used is important. Chloroform never; ethyl chloride never; ether in minimal amounts: spinal anaesthesia, nitrous oxide—oxygen, paravertebral nerve block, and cyclopropane serve the purpose best. Occasionally local anaesthesia may be suitable.

Arteriosclerosis

Arteriosclerosis is one of the most serious problems of the diabetic. He seems particularly prone to develop it. A peculiar feature of the arteriosclerosis is its premature development. Doubtless also the development of arteriosclerosis in old age turns many efficient islets of Langerhans into scar tissue through continued malnutrition and thus transforms the elderly individual into a diabetic. The badly treated juvenile diabetic of five years' standing has well-marked arteriosclerosis with calcification of the vessels, both palpable and demonstrable by x-ray examination. To-day arterial disease, not coma, is the principal cause of death of the diabetic and the solution of the problem has become an urgent one. It seems unlikely that we will readily find a mode of restoring the damaged and aged vessel to its former state of efficiency but the prevention of arteriosclerosis is an important avenue to explore.

Arteriosclerosis in the diabetic often involves the larger trunks but this is

of little real significance. It also involves the intima of the smaller arteries and the arterioles, thus diminishing the nutrition of the region supplied. The latter becomes of particular importance where only end arteries with a poor collateral blood supply exist such as in the extremities, the coronary vessels and the brain. In the heart the process causes a coronary sclerosis resulting in a slowly progressive failure of heart muscle with frequent, though often minor attacks of coronary thrombosis. Treatment in the diabetic does not differ materially from the measures commonly in use. In the brain the most common result is hemiplegia, but sometimes premature senility is the outstanding result. In the extremities pain, claudication, coldness, malnutrition, impairment of sensation and gangrene are frequent results of the arterial disease. Preventive measures here would appear to be of benefit and such instructions as are given in the appended direction sheet embody most of the useful points. One would particularly stress the importance of keeping the trunk overly well clothed as a means of improving the peripheral circulation.

For the patient with established gangrene, a wise conservatism may be enjoined. When the gangrenous region is small and aseptic, avoid making it septic with wet dressings. Dry heat is all that is needed. If septic drain widely, use heat and moist antiseptics—preferably dilute chlorine compounds—and wait. If care is taken, minor amputations or reconstructions may be sufficient. If large from the onset, or painful, septic and spreading, have the courage to amputate early at the knee. This can be successfully accomplished almost as frequently as a mid-thigh amputation and it gives a useful end-bearing stump. If a mid-thigh amputation fails, a disarticulation at the hip is not well borne by the diabetic. Leg amputations are not useful afterwards because of pain and ulceration in the stump, but temporary amputations of the guillotine type to remove sepsis are sometimes desirable. The very old diabetic with an amputation will not walk again. From this standpoint it makes little difference where the amputation is performed. In the patient who is physically and, quite as important, mentally under seventy, it should be remembered that a major amputation throws additional opportunities for trauma on the remaining limb and amputation of the latter all too frequently becomes necessary. The expenditure of considerable time and effort in the endeavour to confine the first amputation to the minor class is justifiable.

Other Complications

The management of the diabetic with other complications such as heart disease, nephritis, hyperthyroidism and pernicious anaemia is, fundamentally, not different from the treatment of these conditions in non-diabetics. Particular aspects of treatment, such as the fact that diets high in fluids and salts commonly given to diabetics may require restriction in some cases of nephritis and heart disease, must and can be reconciled. Hyperthyroidism exerts a most deleterious influence on carbohydrate tolerance and, in diabetics, is exceedingly prone to recur after operation. After thorough preparation by diet, insulin and iodine, it seems most satisfactory to do total thyroidectomy and rely on dried thyroid gland afterwards to hold the metabolism at 90 per cent. of the

normal. The mildly beneficent influence of hypothyroidism on the carbohydrate tolerance of diabetics need not be wholly destroyed by too vigorous treatment. Restoration of the basal metabolism to 85 or 90 per cent. of the normal with thyroid substance is adequate to banish myxoedema and most of the evidences of hypothyroidism, while still leaving that placidity of disposition so favourable for the diabetic. The combination of diabetes and pernicious anaemia is not very infrequent. With the present day liver extract for intramuscular use, the treatment of the two conditions in a single patient presents no great difficulty. As our diabetic population under adequate treatment increases in length of days, the incidence of malignant disease tends to rise. Because of the diabetes we need not depart from the accepted principles of treatment of the tumour. Just as surgical intervention makes possible the development of an acidosis so, too, extensive radiation therapy may induce nausea, vomiting and acidosis, fortunately controllable by nembutal, saline or saline-glucose injections and sufficient insulin.

APPENDIX

MEDICAL SERVICE, TORONTO GENERAL HOSPITAL
INSTRUCTIONS FOR PATIENTS WITH PERIPHERAL VASCULAR DISEASE

For Date

1. Wash your feet every night with castile (face) soap and warm water. Dry your feet completely with a soft towel, without rubbing the skin.
2. Apply rubbing alcohol (70%) and allow the feet to dry. Then apply a liberal amount of vaseline or purified lanolin to the feet, including the toe-nails, and gently massage the feet.
3. Cut your toe-nails only in a very good light and only after washing the feet. Cut the toe-nails straight across.
4. Do not pare corns or callouses or apply corn plasters. To remove a corn or callous, soak the foot for half an hour in warm water to which baking soda (1 tablespoonful to a quart of water) has been added. Upon drying the feet, the loose, dry skin may be removed by light friction with a clean pumice stone.
5. Wear loose fitting bed socks at night. Do not use hot water bottles, electric bed warmers, etc.
6. ALWAYS KEEP YOUR FEET AND EXTREMITIES WARM; wear soft woollen socks, and change them daily.
7. Wear a properly fitted shoe, one that is long enough, not too tight, and fits at the ball and heel of the foot. Shoes made from soft stout leather with a moderately thick extension sole and a high box cap to protect the sole of the foot and the toes are the most satisfactory. New shoes should only be worn half an hour daily until "broken in".
8. Avoid exposure to extreme cold.
9. Do not wear circular garters or sit with your legs crossed; both tend to obstruct the circulation of blood in the legs.
10. Avoid walking the distance which brings on a sensation of fatigue or pain in the muscles of the leg or foot. Avoid standing for long periods.
11. Do not use tobacco.
12. Never use any antiseptic drugs on your feet except boracic acid (1 teaspoonful diluted in a pint of water) without the advice of your physician.
13. Go to bed and call your doctor upon noticing any abrasions, pain or redness in the foot.
14. If your eyesight is poor, have a member of your family examine your feet once a week.
15. If you are a diabetic, adhere strictly to the treatment advised. INATTENTION TO DIET MAY BE FOLLOWED BY DISASTROUS RESULTS.

Public Health and the Traffic Accident Problem*

N. L. BURNETTE†

Ottawa

THE CANADIAN PUBLIC HEALTH ASSOCIATION, meeting in Vancouver a year ago, authorized the formation of a committee to study certain phases of the cause of automobile accidents. This is indicative of something more than interest. It may be interpreted as a willingness to shoulder part of the responsibility. The next step would appear to be a consideration of how best this desire to help can be expressed in action.

Has not the time come when public health should completely divest itself of an attitude of diffidence and ask for a seat at the council table of those official and voluntary agencies presently engaged in the field of safety education?

The validity of this request rests on a firm premise. The accident toll is rising. On the other hand, public health can show a record of achievement in the prevention of premature fatality and unnecessary suffering from certain diseases. The function of public health is to conserve life. There is no accepted variation of this definition, which places a waiver, so to speak, on any specific hazards. There is no profit in saving children from diphtheria to have them crippled on the streets; or prolonging the usefulness of the lives of diabetics if they are going to be killed horribly on the highway.

It is suggested that public health could make its first contribution to safety by explaining in simple non-technical terms what is meant by the individual case analysis approach; point out the handicaps under which safety education is operating because it ignores this viewpoint; and submit concrete suggestions for making more precise the approach to the accident problem by the use of indicated or known methods along clinical and preventive lines.

Perhaps it would clarify discussion if we took the position that there are certain features of traffic safety which primarily are not within the province of public health. Road construction, traffic control, law enforcement and automobile design have a bearing on the accident record. In the first three matters there is evidence that those responsible are at least headed in the direction of ultimate satisfactory solution. Concerning recent automobile styling, one does not feel quite so optimistic, but it is to be hoped that certain features are merely transitory fads. Where there is confusion, is in connection with the human factor. Nothing better illustrates growing but unformulated dissatisfaction concerning the non-success of safety education than some of the extraordinary suggestions that have appeared in the press. Two examples will suffice.

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†Chairman, Committee on Accident Prevention, Canadian Public Health Association.

(1) Under a 60-point heading entitled "The Vigilantes are Coming", a signed editorial in a widely circulated magazine stated that:

"You have been adjudged guilty on all counts. There are no extenuating circumstances. You have been indicted and convicted before the Canadian court of common sense as Public Enemy Number One. You constitute the biggest crime problem of our day.

"You, like the Ishmaelite of old, have set 'your hands against every man'. Hence, it is the sentence of this court that every man's hand be set against you. Our law-enforcement bodies, while competent to cope with orthodox criminal types, are impotent in dealing with you—a citizen who has placed himself outside the pale of the law. These forces must be greatly augmented, and at once!

"This court recommends the establishment of a nation-wide corps of vigilantes—an army of careful drivers, pledged to drive you and your ilk from the King's highway. The vigilantes will be armed with deputies' credentials and their sworn statement will be a bona fide warrant of arrest" . . . and so on, ad nauseam.

(2) A Canadian press despatch reported that at a gathering at Toronto a resolution was passed asking that the Ontario Department of Highways require that "Provincial policemen should carry pipettes and draw a few drops of blood from the ear lobes of anyone involved in vehicular accidents and send the sample for analysis to find any alcoholic content".

Of course such things are very funny, but they can produce reactions which are the reverse of humorous unless those who should give leadership do something more than sit back and smile. The examples quoted really express the views of quite a large body of sincere but uninformed individuals. The first is predicated upon the untenable assumption that there are numerous drivers who are potential homicides or suicides; or that there are any appreciable number of motorists indifferent to injury to themselves or others, or damage to their or other people's property. The second belief unfortunately is held with all the fanaticism of faith which rejects reason. But if we take the statistics for intoxicated drivers, and for good measure multiply this by 20, it would still leave 80 per cent. of accidents which could not be explained by our temperance friends. Speed is another useful "whipping boy" used by those who think there is a simple answer to a complex problem. So we have the school of thought that believes that we can eliminate traffic accidents by putting governors on the engine. If we take the figures for accidents attributed to excessive speed and *double them*, it would still leave unaccounted for the at present unexplained actions over 40 per cent. of those involved in accidents.

Let us examine one actual case because it illustrates nearly all the wrong attitudes which at present bedevil our problem. A funeral is proceeding along a paved suburban road. One of the cars in the procession is struck by a heavy truck coming from the opposite direction. The combination of circumstances that led to the collision can never be fully determined because some of the actors in the tragedy met their death, but without even waiting for the preliminary enquiry at the inquest, one reputable organization forwarded to the

Provincial Government a resolution calling for the widening of all country roads to the same width as the main highways; and letters appeared in the press pointing out that the accident proved that the Ontario Government was wrong in proposing to raise the highway speed limit from thirty-five to fifty miles per hour. Now, the main factor was human behaviour and *not* the width of the road. Moreover, the new speed law was not in effect and had no bearing on this case. Why is it that persons who know that they lack the requisite training to establish causes leading to death or disablement in general, feel perfectly competent to pass an opinion in the particular case of an automobile fatality; and why does the one group whose chief concern is the conservation of life remain silent under an avalanche of amateur diagnoses?

The Need for an Epidemiological Approach to the Problem

Consider some recent accident statistics. During a six-year period in Ontario there were over three thousand killed and nearly fifty-two thousand injured. Approximately twenty-six per cent. of the drivers held responsible were on the wrong side of the road; twenty per cent. drove off the roadway; fifteen per cent. did not have the right of way; twelve per cent. could not be classified even under one of the vague terms noted. Consider further the complete absence of the etiological viewpoint as exemplified by the classifications. In none of these groups could the underlying reasons for the accidents have been the same in each and every case. Lacking evidence to the contrary, one is justified in suspecting that true causal components might include such matters as psycho-physical factors affecting variations in reaction time, judgment of space relationships; motor co-ordination; peculiarities of, as well as defects of vision; hearing; intelligence levels; the more common form of the neuroses and psychopathic states; and physical factors including the limitation of movement as well as arterial and circulatory conditions. Surely sufferers from such conditions are properly the subject of study by physicians and scientists rather than punishment by the courts.

To arrive at a true understanding of the human actions that cause accidents (and without this knowledge we can neither correct nor warn), we cannot be satisfied with such explanations as "travelling too far over on the wrong side of the right of way" or "misjudging a situation at an intersection". We need to know much more. Why were over a quarter of all the drivers involved in accidents too far over on the road? Is there, with some individuals, a constant fear of the right-hand ditch which even time and experience does not eradicate? In specific cases, what happens when a driver of this type starts to correct his mistake? Are his mental processes too slow, or does he think fast enough but find himself handicapped in what he wanted to do by such a simple matter as a painful rheumatic shoulder? To what extent do defects of judgment, or time, space, and size relationship, have a fundamental bearing on the phenomena of accidents at intersections? Public health might perform a valuable service if its leaders would raise such questions and help the safety

field build up an epidemiology of accident experience by means of the public health technique.

It should not be difficult to draw to the attention of the public the fact that knowledge of contributing and causative factors has played an important part in the control of disabling conditions which were once common. In other words, science has not been content with treatment alone. It has sought for the various circumstances or combination of circumstances which cause the trouble. Thus two things have been made possible, correction of conditions at the source, and the teaching of preventive measures.

The first step toward defining an epidemiology of traffic accidents would appear to be the collection of information supplementing our present statistics. It must be granted that a practical obstacle is presented by the easily understood defensive attitude of persons who are being questioned concerning their part in an accident. One wishes that safety education would let up a little on preaching care and courtesy to the individual, and as an experiment concentrate on "responsibility". If this were tried, perhaps a larger number of motorists might be influenced to take to heart Cromwell's remark to the heads of The Kirk of Scotland: "I beseech you, in the bowels of Christ, think it possible you may be mistaken". However, the difficulty is not insurmountable and pre-supposing co-operation on the part of even a percentage of drivers under examination, and a tactful interviewer trained in the art of skilful questioning, it is reasonable to suggest that valuable leads to further investigation would be uncovered. Furthermore, the situation is so grave and the number of drivers involved so large, that it would be both desirable and practical to submit a sampling of cases to technical examination by experts. Neither type of examination should be confined entirely to those involved in accidents causing death or injury. A study designed to establish causes should include minor mishaps; otherwise, the selection will colour the picture. In the last report of the Ontario Department of Highways, 25 per cent. of all the accidents reported involved property damage only. There is no reason to suppose that the actions of the drivers in this group differed greatly from those that caused injury or death.

Employing the Experimental Method

There is another approach frequently employed by science in other fields, which could profitably be used—the experimental method. It should not be necessary for public health to do more than explain the part which research has played in building up epidemiologies; and perhaps cautioning the public against expecting over night dramatic results. The field is so new that speculation is justified. Only a painstaking testing of theories can establish their pertinence.

There are interesting devices that measure objectively the basic skills that compose driving ability. That at present possibly too much emphasis is being placed on the play instinct as a means of interesting motorists in the use of these machines, is probably good psychology and may be considered merely as a passing phase.

One of the most promising fields for experimental work would be our secondary schools because here assembled under control are a large proportion of next generation's drivers. In the United States some high schools already are demanding that the student pass a driving test before being given a graduation diploma. This is an example of advanced thinking which recognizes that we live in a mechanized age. It certainly provides an opportunity to inculcate good driving habits from the beginning. It may disclose an occasional case of a child who should not be allowed to drive at all. More important still, from the public health viewpoint, if the school physician has a part in the scheme, there is an opportunity to warn the student about physical defects, if any, and suggest corrective measures. It is not our place to offer additions or amendments to the educational curricula. What has been done is quoted merely to point out that where scientific investigation is undertaken, schools might be considered as a convenient source of material for study.

Data accumulated in the manners noted would fill in some of the gaps in our knowledge of causal factors. From this, with all due caution, inferences could be drawn, and we could outline educational material of a much more scientific nature than that being used at present.

It seems advisable to stress again the necessity of creating a proper mental attitude on the part of the public in connection with what to most people would appear to be a novel approach to the accident problem. It should be pointed out that public health does not teach that everyone who drinks unpasteurized milk will contract typhoid, or diphtheria, or scarlet fever, or septic sore throat, or bovine tuberculosis. From the information accumulated, public health authorities do know that there is the constant danger of such disabling conditions if we use unsafe milk, and they warn us accordingly. So with accident causes. We could not dogmatize about the cause of every accident, but if a study disclosed that there is a cause and effect relationship between unsafe driving and certain physical characteristics, mental attributes, or unwise habits, we would possess a guide, when searching for reasons; we could advise corrective measures and teach prevention.

Public health is in a position to make a lasting contribution to a problem which, in a few short years, has become of national magnitude. From the rich storehouse of experience and training, public health can aid the safety field in collecting additional statistical information; in making an experimental approach to the establishment of causes; and in testing further the various methods of control. We could look forward to the eventual development of, at least, modification in present educational methods. Human nature being what it is, perhaps we can never entirely dispense with the admonitory figure of the policeman as a symbol of safety teaching. But it is not too much to hope that, under proper direction, public opinion will broaden out and the physician, the scientist, and the educator will also be visualized as advisers worthy of attention if we desire safety on the streets and on the highways. We do not fine the sick or throw them into jail. We remove them to hospital. They are either cured and returned to society or else society is permanently protected against the harm

they might do. So with the driver who is a menace through no fault of his own. He has no criminal intent, he is not even careless in the real sense of the word. His case is not one for the police. It can only be studied and reported on by those trained in the interrelated sciences that throw light on human behaviour.

CONCLUSIONS

The situation which led to the formation of a study committee at last year's meeting of the Canadian Public Health Association has not improved. It is going from bad to worse. In Ontario, which contains the bulk of Canadian registered motor vehicles, traffic accidents for the first two months of 1937 increased 29.5 per cent. from the corresponding total for 1936. Fatalities increased by forty. The non-fatally injured totalled 1,275 as compared with 900 for the same period last year.

In view of the advances made by preventive medicine in the control of certain diseases of early life, it is disturbing to note that fatal motor accidents to children in Ontario under fifteen years of age increased from four in the first two months of 1936 to fourteen in 1937; and that forty-five children under five years of age were injured as against sixteen during January and February of 1936.

These figures constitute a loss item on the balance sheet of public health and present a challenge to those whose life work is the protection and conservation of human life.

For epidemiological purposes, the determination of causal factors in an accident is just as important as the accurate filling out of a death certificate. Without this necessary basic information, preventive work cannot be scientifically projected.

Public health experience provides known or indicated methods for making more precise the approach to the various aspects of the accident problem.

Until such time as public health techniques are introduced into safety education, it is doubtful whether any improvement in the present state of affairs can be expected.

Unsafe driving is as much the concern of a health officer as unsafe milk or an unsafe water supply.

The Health Department, because of its trained personnel; because it has the accumulated experiences of public health at its command; and because of the function which it performs in the community, is the logical body to give leadership and direction to local safety effort, if the traffic accident toll is to be reduced.

The Rural Health District

G. M. LITTLE, M.D., D.P.H.

*Medical Officer, Red Deer Full-time Health District
Red Deer, Alberta*

THE full-time health units of our continent vary greatly as to area, concentration of population, roads, etc., and it will be remembered that any opinions or conclusions which I may present are coloured chiefly by my own particular environment and experience during the past six years as medical officer of the Red Deer Full-time Health District—an area of 1,700 square miles with a population of approximately 20,000 and containing 85 rural schools as well as those of our 10 towns. The largest of these towns is Red Deer, where our office is situated, and which has a population of 2,400. Our most distant school is 50 miles. Our staff consists of a health officer, two public health nurses, a stenographer, and a half-time sanitary inspector.

The governing body of our unit is the District Board of Health, which is composed of one representative from each municipality and town in the area. This board meets quarterly. Each member of the board gives us an interested citizen with an official standing in each division of our district, and constitutes a valuable link between our staff and the municipal council and people of his municipality in general. He can do much to maintain the efficiency of our service.

Obviously with such an area, transportation is a major problem which is increased by the fact that many of our rural roads are impassable by car for several months during each winter. This latter difficulty is overcome to some extent by arranging as much of our scheduled work as possible in the towns during this period.

While approximately two-thirds of our total population is rural, our school population of 4,250 is almost equally divided between the rural and town schools because of the many rural students attending high school in the towns.

Health Instruction

Health education, both in our schools and out, we have considered the foundation of all our other public health efforts. A knowledge of our problems by the citizens not only leads them to avail themselves of our service, but smooths our path considerably if troublesome situations arise. I think it impossible, however, with the budget and staff limitations of the average public health organization, to give this educational work the prominence which it deserves in our program. The demand for concrete accomplishment crowds education into the background, and unfortunately we cannot readily produce statistics to prove the inestimable value of such educational work.

Health talks to various adult and school groups, home nursing and first-aid classes to teen-age groups, a mimeographed health magazine to our schools and

newspaper articles we have found all very useful. The material for our health magazine is contributed to a large extent by the school children themselves in the form of stories, poems, or cartoons dealing with health subjects and prepared as class work. Pictures for our magazine cover are drawn by the art classes and add much to the appearance of the publication. The teachers of our schools have been very co-operative in the project, and such work is of real educational value for the children. A series of pre- and post-natal letters is distributed in our district as indicated.

The organized support of the women of a district is, I think, of the greatest importance to any health effort. In our initial survey we found that our area already contained some 42 women's organizations, chiefly Women's Institutes and Farm Women's groups, on whose programs health had a prominent place. Rather than duplicate these organizations by forming a special women's auxiliary, we invited these groups to assume the function of such an auxiliary, which they all kindly agreed to do. These ladies have been our most active allies. Their consideration of and assistance in local problems, as well as in the dissemination of health information, have been of the greatest value. We send to each of these groups a periodical bulletin containing information of the work we are doing and discussions on various health problems of our community.

With limited time and money to spend in direct health education, I believe that actual work done, and contacts made in the doing, have been most fruitful in educational results. By this route we may be slow in reaching some of our citizens, and this is perhaps part of the reason why a public health organization can reach the height of usefulness only after several years' operation in a given area. Numbers of girls whom we examined or immunized in school a few years ago are now mothers, and we find them most enthusiastic seekers after similar care for their own children.

Sanitary Supervision

Sanitary supervision of our towns and their water supplies, of all dairies and milk supplies, and of food and food-handling establishments gives a service which our district did not previously have, and which I believe could not be effectively instituted except through a full-time organization such as a rural health unit. The supervision of water supplies, heating, lighting, ventilation, and general sanitation of our rural schools is greatly appreciated by the people of these areas and is, I think, a valuable service. There is also opportunity to help many farmers with sanitary problems about their homes. Our sanitary inspector divides his time equally between the two health units at present in our province. During our six years of operation 4,841 sanitary inspections have been carried out.

Communicable Diseases

As I believe is the case with most public health organizations, we find our most effective approach to the control of communicable disease in the close checking of our school population. Human frailty in reporting of these diseases is well known to us all, but repeated combing of the school group for suspects

and absentees in an area where any cases have occurred gives us our clues which lead to most of the homes where other cases may have been overlooked or neglected.

At first glance our statistics in this connection may be disturbing. Certainly the total number of cases of minor communicable disease in the health unit will be listed as much higher than in adjacent areas where close supervision is not maintained. An outbreak of chickenpox in one of our larger schools some years ago was heralded only by the rumour that the disease was in the district and the fact that there was an unusually large number absent from school. Investigation discovered some fifty cases of chickenpox, not one of which had been reported.

In certain of these mild communicable diseases, until more effective preventive measures offer, I think it rational to compromise between technically ideal regulations and utility. For example, the quarantine of german measles contacts for the full incubation period, a practise now abandoned by our own and I believe most provinces provided the case itself is isolated, would mean a tremendous loss of school time which is difficult to justify in the light of the mildness of the disease and the fact that the quarantine is rather ineffectual anyway.

A rural health unit offers considerable opportunity in the control of tuberculosis. In our own unit, with the co-operation of officials from our Provincial Sanatorium, local physicians, municipalities, hospitals, and certain service clubs, we organize yearly clinics at four points in our district where x-ray examination is available, and at which all known cases, contacts, and suspects of tuberculosis in our area are given examination, including x-ray, free of charge. Since these clinics were well established, the majority of our new cases have been discovered while yet in fair physical condition and before they have become spreaders of the disease. In the interval between clinics, we maintain supervision of this group through home visits by our nurses. Recent provision by our provincial department of health for the sanatorium care of these patients at the expense of the province has greatly facilitated the removal of active cases from contact with the community. Last year 103 cases, contacts, and suspects were examined at our clinics and 5 new cases identified.

Immunization against smallpox and diphtheria has been carried out in our schools each alternate year since the operation of our health unit began; and a beginning, to the extent of some 1,000 children, has been made in the immunization against scarlet fever during the present year. During the previous school term our records showed that 76 per cent. of our school children had received vaccination against smallpox and 77 per cent. the inoculations against diphtheria, figures which we found very encouraging. Moreover, in response to our invitation parents have brought their pre-school children to the schools in increasing and gratifying numbers to receive this service. Since beginning this work 3,938 Schick-tests and 1,350 Dick-tests have been made. Five thousand three hundred and ninety-two anti-smallpox vaccinations, 15,225 diphtheria toxoid and 5,857 scarlet fever toxin inoculations were given.

Smallpox and diphtheria have not been a problem with us, and should not

be if we can maintain our present proportion of children immunized against these diseases.

Giving of protection against scarlet fever by use of the toxin appears to be a fairly effective, if laborious, procedure. While this disease has responded very satisfactorily in our area to careful quarantine measures, the frequency of complications and the economic loss due to the long quarantine necessary have led us to feel that we should make every effort to give our district the benefit of preventive inoculation. We have frequently combined the scarlet fever toxin with diphtheria toxoid as suggested by Dr. R. B. Jenkins* and have found this a convenient and effective method.

Our inoculation against typhoid fever has been limited to two areas of our district in each of which a carrier of the typhoid bacillus was identified.

School Medical Services

We have been convinced that in order to reach a high percentage of our people, particularly in the early years of our health unit, our service must be brought as near as possible to the homes. In the rural areas the school house in each district is a convenient centre, and while repeated visits to every rural school for the giving of such immunization as diphtheria toxoid means considerable travelling, we believe this effort has been amply repaid by the large proportion of children protected. Our rural schools average 25 pupils and, given reasonable weather and careful routing, we can visit five and frequently six schools daily for this purpose. Particularly in this field does work already accomplished assist us. When we can point to several thousand children in the community who have been immunized without dire results, most of the doubters are either convinced or are sufficiently passive to give permission for their children to be protected.

Obviously, with such a widespread area and population as ours, we cannot hold enough clinics in a sufficient number of places to maintain frequent supervision of the diet, etc., of well babies in the district. A considerable amount of information regarding these problems, however, is given to mothers through correspondence from our office, and clinics are held at as many points in our district as possible and repeated two or three times a year where babies and pre-school children are examined physically and their condition and general development discussed with parents. This plan at least allows us to call attention to many physical defects at a reasonably early stage. Since the institution of our unit, 2,560 of these examinations have been made.

We have made physical examination of pupils in all our schools each alternate year, and 11,661 of these have been carried out to date. A report of our findings is submitted to parents, and in the case of more serious defects a home visit is made by our nurse to discuss the problem with parents. We have found it impossible to get a large percentage of parents to come to the school at the time of our examination. Much of this rural work must be done in the fall when our farm men and women are exceedingly busy at their vocation. At any rate, these house visits make an excellent entry into the home for our nurses, and we have found such contacts in the homes most valuable.

**Canad. Pub. Health J.*, 1936, 27: 324.

Perseverance seems to be the keynote in obtaining correction of defects in our children. Many parents appear to recognize the need for action only after repeated reports and visits from our staff concerning the matter. This may be due to our lack of persuasion, but we think it is accounted for chiefly by the mental inertia of many citizens regarding health matters. After all, active preventive medicine is comparatively new, and certainly is so to many of our rural people. It is perhaps too soon to expect that keenly health-conscious attitude in many of our people which would make for a prompt response. Considering such economic times as have prevailed, however, we were pleased to find at our last examination that of the children whom we had found defective two years previously, 41 per cent. had received some correction.

We have felt that the period between these complete examinations of our school children might be lengthened somewhat without seriously detracting from the value of the service; but on the other hand we have encountered so many rapidly developing defects of vision, and this defect being such a serious handicap to this group, that we have decided to check their eyesight every year. Accordingly, our nurses do this in the years intervening between our complete physical examination, and while doing so they also record the weight and normal weight of each pupil. A copy of this record is submitted to parents.

Those financially unable to obtain correction of defects for their children have been a difficult problem during recent years. We have been able to arrange for numbers of the more urgent cases to be cared for with assistance from service organizations or from the municipalities concerned. On presentation of our records to the physicians of our district, showing the considerable percentage of school children having diseased tonsils and adenoids, all our doctors responded immediately by instituting special clinics during the summer holidays at which these defects are cared for at a reduced fixed fee. This excellent piece of co-operation has made possible a greatly increased number of such corrections.

Periodic Health Examination

In the matter of periodic examination of adults we have concluded that unless time can be found without crowding any other part of our program, our effort in this direction should be an educational one, and that the individual be urged to consult his family physician yearly. Life Extension clinics which we have held were exceedingly popular, but I am sure that no less than 80 per cent. of clients came to consult us regarding a disability or to check on a diagnosis made by some of our medical friends. Furthermore, in spite of repeated assurances that we could not undertake medical treatment, many depart disgruntled because we can go no further in this direction than to refer them to their family physician. It is true that we can point to the small percentage in whom we detected an early diabetes, cancer, etc., but from a broad viewpoint, I believe it best for all concerned that our effort be toward bringing the adult to his private physician at least yearly for the purpose of maintaining good health.

One hears broached frequently amongst our people the need for a plan which will facilitate the distribution of medical treatment services. Indeed, such need is frequently observed, I think, by anyone in close contact with

health work. I suspect that as a profession we have not yet grasped the full extent of public feeling in this matter. Perhaps it demands more energetic study and action than we have yet put to it so that we may not find ourselves carried along on a wave of legislative action over which we have little control.

Laboratory Services

In the matter of laboratory procedures, we have prompt and convenient service from our provincial laboratory at Edmonton. Our work done locally is therefore confined chiefly to that which is supplementary to our own work; i.e., analyses of milk and water, urinalyses, and blood counts. With the moderate amount of culture work required we have found the dehydrated media supplied by the Difco Laboratories very convenient. Our records show 938 bacteriological analyses of water, 685 bacteriological and butterfat analyses of milk, and 719 other laboratory procedures.

Co-operation of the Provincial Department of Health

In Alberta our provincial Department of Health carried out the preliminary organization of our two present health units, and since their inception the department has maintained a close co-operation without which many of our projects could not have been carried out effectively. I am convinced that the active supervision and co-operation of the provincial health department is essential to obtain the maximum of usefulness and co-ordination of all public health projects within the province.

That the health unit staff should be well qualified by technical training and experience is, I think, of the greatest importance. For a medical officer a few years in general practice seems most advisable to round out his viewpoint. A nurse loses much of her value if not experienced in meeting the public under varying circumstances. In our rural areas our personal contacts are certainly looked upon as "personal" by our people. I believe this is fortunate, and that it adds to our opportunities. An unduly "official" attitude fails to promote either confidence or co-operation. In other words, I believe that the personality of each member of our staff has much to do with the success or failure of our organization.

One further point I should mention—the relation of the health unit staff to the practising physicians within that unit. The friendly family physician can do much to facilitate and add effectiveness to our service. On the other hand, he should be assured by word and action that we respect his position and interests in health matters of the community, and that as far as lies within our province we stand ready to give him our prompt and friendly co-operation. Many such opportunities offer, and we should grasp them.

It is our hope and expectation that the near future holds wide expansion for preventive medicine. If I should presume to offer any counsel to those beginning this work it would be that we may avoid many discouragements by adding patience to our ambition, and by tempering our energy with an understanding of the viewpoint and circumstances of those to whom we wish to deliver our services.

The Ascorbic Acid Content of Milk

E. J. REEDMAN

School of Hygiene, University of Toronto

IT has long been considered that the content of vitamin C in milk is low and that milk is an unimportant source of vitamin C in the diet. Since, however, milk is possibly the most important food of infants and children and is consumed in large quantities, further observations on the ascorbic acid (vitamin C) content have been made.

A series of samples from four breeds of dairy cows collected during the month of November, 1936, were used and the ascorbic acid content determined. From the results obtained it is evident that the ascorbic acid content varies little between breeds or among the animals of the same breed and, further, little variation was noted in the stages of lactation or with the age of the cattle. This constancy has been reported by other workers (Kon and Watson, 1; Sharp, 2) and is in contrast to the pronounced variation in the content of ascorbic acid in many foods. There was a marked difference, however, in the total output of ascorbic acid, values ranging from 273 to 833 mgm. daily. The amount varied directly with the quantity of milk produced.

Dairy cattle are not susceptible to vitamin C deficiency, having apparently a mechanism for the synthesis of ascorbic acid, and in addition they receive diets high in the antiscorbutic factor. Analyses have shown pasture grasses to contain 20.5 to 136.0 mgm. total ascorbic acid per 100 grams in a series of samples taken in October, 1936. Within a species of grass and between species, large variations occur both in reduced and dehydroascorbic acid content. Hay may contain as high as 30 mgm. per 100 grams, while in silage 12 to 50 per cent. of the original ascorbic acid content is conserved over a period of six months, the residual amount depending on the method of preservation. It may be calculated that a dairy cow on a winter ration receives approximately 9 grams of ascorbic acid daily in the diet, and on summer pasture considerably more. As stated by Chu and Seing (3), milk, as a secretion, behaves as a body tissue, having a saturation point which is apparently maintained in healthy animals.

The ascorbic acid content of milk was found to decrease gradually on storage. Samples of raw milk cooled immediately to 5°C. and stored in the dark retained approximately 75 per cent. of the original value after forty-eight hours. Added ascorbic acid behaved similarly. Only reduced ascorbic acid is found in fresh raw milk stored in the dark. It would seem that ascorbic acid oxidase is absent, or present in very small amounts in milk, as noted by Tauber (4).

Milk pasteurized thirty minutes by the holder method retained over 70 per cent. of the original vitamin C content, the highest destruction noted being 26.5 per cent. Buttermilk, whey, powdered whole milk, and evaporated milk

contain a small amount. Raw skim-milk averages 2.5 mgm. ascorbic acid per 100 cc., while skim-milk powder may contain as much as 26.7 mgm. per 100 grams if dried by the Just drum method. All analyses were made by titration with 2:6 dichlorophenol-indophenol, after precipitation and extraction with trichloroacetic or metaphosphoric acid. Titrations were made rapidly into a measured volume of accurately standardized indicator, with glacial acetic acid, sodium oxalate, and a small volume of water added to the titration flask.

It is true that milk, alone, will not supply sufficient vitamin C in the diet but it is equally true that it would not normally be required to do so. As an average, a pint of milk may be said to contain 10 mgm. of ascorbic acid after pasteurization. As shown by Kon and Watson (5), it is doubtful if this content is maintained under ordinary methods of handling, but some contribution to the total ascorbic acid in the diet may be expected from the milk consumed. Synthetic ascorbic acid may be added to milk before use in some instances, but other sources must be looked to for the chief supply in the average diet.

There was considerable controversy for some years as to the effects of pasteurization on the nutritive value of milk. The most recent studies show that the nutritional value of milk is practically unchanged by properly-conducted pasteurization. Wilson, Minett and Carling (6) have published their findings of carefully controlled observations showing that the nutritive value of pasteurized milk for calves is equal to that of raw milk. It is reported that pasteurization of milk renders its calcium and phosphorus content less available, but it must be remembered that the dangers of raw milk in transmitting disease far outweigh any minor objections to careful and efficient pasteurization.

Thanks are expressed to Dr. E. W. McHenry and Professor C. H. Best for their interest in this investigation.

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Communicable Disease Control in Scarborough Township, Ontario

C. D. FARQUHARSON, M.D.

Medical Officer of Health

THE township of Scarborough is a suburban municipality, approximately 8 miles square, bordering on the city of Toronto, with a steadily increasing population, which has grown from 17,500 in 1925 to 22,000 in 1936. The people live under both urban and rural conditions, the housing accommodation changing from the closely built-up city type of house to the mixed uncertain types of scattered suburban dwellings, which in turn change into typical farm houses, some of the best in the province and some in the opposite category. The municipality has had economic difficulties during the depression, as much as one-third of the population being on relief at one time.

The school population of approximately 4,500 is accommodated in 17 public schools varying in size from the single room accommodating all classes under one teacher to the large school with 1,000 pupils and 25 teachers. There are 3 Separate schools accommodating approximately 400 pupils.

The health organization of Scarborough is that of the usual rural municipality in Ontario, namely, a local board of health, a medical officer of health serving part-time, and a sanitary inspector. The expenditure for the department of health amounts to 10.4 cents per caput (1936). Local physicians are employed by the board of health to assist the medical officer of health in giving inoculations in schools and are paid a small fee on a time basis. There are also three school nurses employed by the boards of certain schools. They are not available for work outside the three schools and are not responsible to the medical officer but to the respective school boards. It must be said, however, that the nurses have always given the utmost co-operation to the medical officer. The sanitary inspector, in addition to investigating complaints, controlling nuisances and other routine duties, helps with inoculations in the schools where there is not a nurse.

Diphtheria

The problem of diphtheria was thrust on the medical officer of health early. With a growing population in overcrowded homes, epidemics were inevitable. In some cases children died before a physician was called. Others died on the way to isolation hospital and still others died in the admitting room at the hospital. The administration of toxoid was undertaken, therefore, as soon as it was available in the hope of preventing such tragedies.

The arrangement for giving inoculations was that each school board first gave permission to do the work in the school and each child was asked to bring the parent's or guardian's consent in writing. It was explained, through visits

to schools, talks to various groups and through personal contacts, that the inoculation service was a privilege offered to people in the municipality to prevent disease and that they would be wise to take advantage of it. Offering inoculation as a favour prevented opposition. The public knew well that diphtheria was a frequently fatal disease and that prevention was highly desirable. This appreciation is evidenced to-day by the large number of preschool children who are brought for immunization.

The result of immunization was striking (table I). Diphtheria has become a rare disease in the township.

TABLE I
DIPHTHERIA CASES AND IMMUNIZATION
Scarborough, 1924-1936

Year	Population	Diphtheria cases		No. Immunized*
		No.	Rate per 100,000	
1924-25.....	15,718	51	320	400
1925-26.....	15,325	29	190	100
1926-27.....	15,721	36	230	500
1927-28.....	16,331	9	50	800
1928-29.....	17,105	31	180	700
1929-30.....	18,212	17	90	500
1930-31.....	18,982	12	60	600
1931-32.....	18,833	5	26	800
1932-33.....	18,876	2	10	600
1933-34.....	21,356	0	0	800
1934-35.....	21,449	0	0	700
1935-36.....		1		700

*With the exception of the 400 given toxin-antitoxin in 1924, all were given 3 doses of toxoid.

Diphtheria Carriers

An investigation of the presence of diphtheria carriers was made in an area where diphtheria had been very prevalent and had disappeared with the use of toxoid, no cases having been reported for several years. In January and February, 1935, nose and throat swabs were taken from 853 children and sent to the Provincial Laboratories for examination. Two were found to yield virulent diphtheria organisms. The period during which these organisms were present must have been very short as second swabs were taken immediately and found to be negative. Blood samples from these two children were sent to the Laboratories for the estimation of the antitoxin content. In each there was sufficient antitoxin present for protection. Both children had been given toxoid. This would indicate that carriers disappear with cases.

The study showed very definitely that even in a group of children that have been thoroughly immunized there still exists the possibility of an outbreak of diphtheria. It is proof, too, if any were needed, that it is necessary to continue the giving of toxoid.

Scarlet Fever

With the introduction of toxin for immunization against scarlet fever, a demand on the part of the public for such protection was soon evidenced. The method involving five injections of toxin was followed in the schools. It was commenced in those schools where there was already at least one case of scarlet fever. The procedure was reasonably successful. Later when scarlet fever toxoid was made available in connection with studies in the Connaught Laboratories, this product was given in three doses of $\frac{1}{2}$, 1, and 2 cc.

Being a product similar to diphtheria toxoid, it seemed reasonable to mix the two toxoids and give them as one inoculation. Mixed vaccines are not new and there does not seem to be any more objection to giving these two toxoids together than to give the mixed typhoid and paratyphoid vaccines. The great advantage is that only three doses are required when the two toxoids are combined. Experience has shown that there are no more reactions to the two toxoids than to one. The only objection is the increased size of the dose given, but this was not a serious deterrent, the third dose being 3 cc. During the years 1931-36, approximately 2,900 received the inoculations of scarlet fever toxoid. In a recent article,* Dr. R. B. Jenkins, Medical Officer of Health of Edmonton, recorded satisfactory results following the administration of diphtheria toxoid and scarlet fever toxin, giving the requisite doses in five inoculations.

An effort has been made to determine the efficiency of the scarlet fever toxoid. In December 1933 there were 437 children known to be Dick-positive who were given three inoculations and then retested three weeks after the last dose. The results showed 304 to be negative and 133 to be positive, an efficiency of about 70 per cent.

In May, 1936, a survey was made of a group of 500 children who had received three inoculations of scarlet fever toxoid during a period of five years. Complete reports were obtained from 123 children and of these 12 suffered scarlet fever. In a number of families where the children had been inoculated, one or both of the parents developed scarlet fever, whereas the children did not develop the disease.

Smallpox Vaccination

In ten years there were two widespread epidemics of mild smallpox. The population was almost entirely unvaccinated. This condition was corrected by supplying vaccination against smallpox, three weeks after the third dose of toxoid. During 1935-36, 500 were vaccinated. The present plan, therefore, is to give three inoculations of the combined scarlet fever toxoid and diphtheria toxoid three weeks apart and three weeks later to vaccinate against smallpox. In large schools immunization work is conducted for incoming classes and any other children each year and in the smaller schools every three years.

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THE FEDERAL GOVERNMENT AND PUBLIC HEALTH

IT is indeed encouraging to all interested in the advancement of public health in Canada that the Dominion Parliament, at its last session, took steps towards the strengthening of the National Health Division of the Department of Pensions and National Health by providing for the appointment of additional scientific personnel. The announcement of the restoration of the divisions of Publicity and Health Education, and Maternal and Child Welfare; the creation of two new divisions, one in Epidemiology and one in Industrial Hygiene; and the appointment of two additional experienced workers in the Laboratory of Hygiene, is a source of considerable satisfaction. It is gratifying also that the Department has specified the qualifications for these important offices, requiring that only those with adequate training in public health and thorough experience in the special field in which each appointment is to be made shall be considered.

It is hoped sincerely that in creating these new divisions the collection of essential data through the conduct of studies will form an essential part of the work. In epidemiology there is urgent need for information on which to base practical and efficient programs of control. Such data can be obtained only by field studies. The accomplishments of the United States Public Health Service, not only in rendering assistance at the times of epidemics throughout the United States but in laboratory and field studies, make us hope that a similar type of service will be rendered by the new Division of Epidemiology.

The Division of Publicity and Health Education has a great opportunity for service. Every health officer is conscious of the increasing importance of health education. The new division might well undertake the preparation of authoritative health literature which could be printed by the provincial departments of health for general distribution. A most valuable and important contribution has been made in this field by voluntary agencies but the need exists for a much wider distribution of such literature, which is possible only through the organized health departments. Because of its present limited provisions, too much must not be expected of this new division, as even the most capable director could meet but a small part of the opportunity which is presented. The progress of the division will depend not only on the ability of the director but on the co-operation of the departments of health and the voluntary agencies.

The restoration of the Division of Maternal and Child Welfare will meet with hearty approval. Maternal mortality and invalidism, infant mortality, and child welfare are problems calling for urgent attention.

Provision for industrial hygiene was not made in the original organization of the Department in 1919. It is interesting, however, to recall that the Hon. N. W. Rowell, who as President of the Privy Council sponsored the Bill for the creation of the Department of National Health, emphasized the need of attention being paid to the health and physical well-being of those engaged in industry. In no field is there greater need for investigation and study. The establishment of this division is evidence of the desire of the Department of National Health to assist the provincial departments in their efforts to safeguard industrial workers.

The Canadian Public Health Association has already expressed in a formal resolution its appreciation of the action of the Government in strengthening the Department of National Health. To the Hon. Mr. C. G. Power the Association has also expressed its hearty endorsement of the plans which he has made for the enlargement of the Department.

THE TWENTY-SIXTH ANNUAL MEETING

THE twenty-sixth annual meeting, held in conjunction with the annual meeting of the Ontario Health Officers Association in Ottawa on June 17th to 19th, was an unqualified success not only from the usual standpoints of the quality of the scientific program, convention facilities, entertainment and attendance, but in the work accomplished by the Executive Council in considering ways and means by which the Association can aid in meeting urgent national public health problems. The Council, whose membership includes provincial representatives and representatives of the Sections of the Association and numbers more than sixty, met in advance of the formal sessions, spending an entire day in the discussion of the Association's activities.

The convention was impressive. Attention was focussed on public health problems in such a way that even the casual observer realized that the conservation of national health is a matter of great concern. The strength of the Association lies in the willingness of public health leaders throughout Canada, and those engaged in every field of public health activity, to give their best to the advancement of public health.

To the Local Committee on Arrangements, under the chairmanship of Dr. R. E. Wodehouse, the Association is deeply indebted. Without their generous aid it would not have been possible to plan such a meeting and to provide such a splendid program of entertainment. Participation in the plans of the Local Committee by the Dominion Government and the Corporation of the City of Ottawa was tangible evidence of the important place that the annual meeting of the Association occupies in Canada.

The Ottawa meeting will be remembered as one of the few occasions on which the Ontario Health Officers Association has met outside of the Provincial Capital. The outstanding success of the meeting makes possible the hope that on many occasions such joint meetings may be held in other Ontario cities.

REPORTS FROM THE ANNUAL MEETING*

Part I

REPORT OF THE HONORARY SECRETARY

FOR some fifteen years it has been my privilege to present annually to this Council some statement of the accomplishments of the Association during the year in question. Probably at no time in the history of the Association, certainly not during my term of office, has its ultimate future been more obscure than at the opening of the year 1936. On previous occasions when there had been some question as to the organization's future, its place in the field of voluntary organizations was questioned by some of its members; on others, its limitations were exaggerated and its possibilities glossed over. But never during the last few years has there been a doubt in the mind of its most lukewarm advocate of its present and future usefulness. Yet your officers faced a situation, due to falling revenue and increased obligations, that taxed their ingenuity and optimism. To have safely weathered the vicissitudes and financial difficulties that beset your Association last year is an achievement of which your Executive Committee might well feel proud. The successful conclusion of the year's activities was in no small measure due to the untiring efforts of the Chairman of the Editorial Board, Dr. Defries, who through ingenious economies in the publication of the JOURNAL and the solicitation of present and potential advertisers has, without lowering the standard of what is considered to be a public health journal of exceptional quality, managed to continue its monthly publication. The financial statement of the Association is ample evidence of the success of your executive officers and with an increased interest in journal advertising, it is hoped that the tide has again favorably turned.

Without any undue desire to reiterate, it seems necessary again to draw to the attention of this, the governing body of the Association, the fact that an organization which makes provision in its membership for all those engaged in the professional public health field, and which includes all of the health officers in Canada, can neither mark time nor stand still; it must of necessity go forward. Its original objectives may have on occasion seemed utopian to its founders, but with the passage of time and the results achieved, many of them have become not objectives but achievements, and new goals have been set and reached. Each forward step adds to the responsibilities of some interested Section or Committee, and each interested Section adds to the load of your Finance Committee. It is not possible for this Association to approximate its

*Presented at the Twenty-sixth Annual Meeting of the Canadian Public Health Association, Ottawa, June 17-19, 1937.

field of usefulness without that happy combination of enthusiasm and adequate financial resources. In substituting the word adequate for ample, I am prompted by the knowledge that it is the enthusiasm of voluntary effort that accomplishes things, but even the enthusiasm of voluntary effort must be sustained by at least the minimum of pecuniary nourishment.

Despite a rigid pruning of the membership rolls, the number of those claiming membership in the Association shows an appreciable increase over last year. As previously inferred, the JOURNAL has continued to command flattering comments from its most critical readers.

The success of the efforts of the Association on behalf of those interested in improving the status of the sanitary officer has already borne fruit. There is every evidence that those seeking certification this year will even exceed that of 1936. The necessity of the applicant for any worthwhile position in this field holding the certificate jointly issued by the Canadian Public Health Association and the Canadian Institute of Sanitary Inspectors is already the accepted practice in certain cities and provinces.

Sectional activities have been initiated during the year. Particular reference must be made to the Sections of Public Health Nursing, Vital Statistics and Epidemiology, and Laboratory Workers. The Committees have carried on with unabated interest; although the Committee on Milk Control suffered a serious set-back in the untimely death of Mr. R. H. Murray, late Sanitary Engineer for Saskatchewan. Your executive has found it difficult to fill the place of this ardent worker on behalf of pure milk.

The manifestation of interest in the Association's efforts on behalf of a wider application of vital statistics by the Actuaries Club of Canada has heartened those who have for years laboured faithfully on behalf of this essential requisite to effective public health administration. The Section has given material aid to the Department of Pensions and National Health in its efforts to secure a nationally acceptable morbidity code. The official concern shown by Governments and others in the subject of contributory medical care makes this imperative.

The fifth annual mid-year meeting of the Laboratory Section was held in Toronto, December 21st and 22nd. The attendance was even greater than the previous year not only in terms of the representative character of those present but in the actual number registered.

The Public Health Nursing Section has during the year continued the study undertaken during the previous year on what might be considered as the suitable requirements for employment in the public health nursing field. This study has developed to the stage where the Section is prepared to recommend suggested minimum qualifications for employment in public health nursing.

The Dominion Council of Health paid the Association a compliment by suggesting that it might undertake an intimate survey of the extent and quality of public health services throughout Canada. Unfortunately, owing to lack of funds it was necessary to limit the activities of the Association, at the moment, to those already undertaken.

The Association has cooperated with the American Public Health Association in the extension to Canada of the Rural Health Conservation Contest carried on by that organization and sponsored by the Kellogg Foundation. Plans for the actual initiation of the scheme have materialized since the beginning of the present year.

Much that is flattering has already been written about the Vancouver meeting. To those who were fortunate enough to be present, nothing need be added to what has already been said; to those who were not able to attend, I wish merely to say that our friends in those centres which the Association will favour with its annual meeting in the next few years, have been set a difficult task in any efforts they may make to emulate the hospitality of our hosts of last year on the Pacific Coast.

While many of those who have passed on during the year have been for many years identified with the Association, perhaps the most significant loss is the one already referred to, namely, Mr. R. H. Murray, who for many years was Chairman of the Committee on Milk Control. The enthusiasm and exactitude which marked all of the reports of this important Committee were characteristic of the man. His efforts in the field have stimulated and will continue to stimulate those responsible for the maintenance of the high quality of this essential commodity.

This year the Association has again continued the practice of recognizing the efforts of those who have contributed to the general advancement of public health in Canada and the United States. The honour was equally divided between its own membership and illustrious colleagues south of the border, namely, Dr. J. W. S. McCullough, former Chief Health Officer for Ontario; Mr. E. S. Macphail, who was until his retirement, last year, Chief of the Division of Demography, in the Dominion Bureau of Statistics; Dr. A. J. Chesley, State Health Officer for Minnesota and Executive Secretary of the State and Provincial Health Authorities of North America; and Dr. Walter H. Brown of the Leland Stanford University and President of the American Public Health Association.

Your Executive Committee has presumed to carry on its responsibilities during the interval between this and the last meeting of Council. It has met four times and I wish to report particularly the regular attendance of its out-of-town membership.

In conclusion, I wish to comment on the extent to which the Association is indebted to the Canadian Life Insurance Officers Association for the continuation of its financial support. This evident appreciation of the Association's usefulness has been an incentive to those responsible for the conduct of your affairs.

Lastly, I wish again to pay tribute to the unfailing interest and untiring efforts on behalf of the JOURNAL and the Association at large of Dr. R. D. Defries and Mr. R. L. Randall, who, as Editorial Assistant, does much to make the JOURNAL possible.

J. T. PHAIR, *Honorary Secretary.*

HONORARY TREASURER'S REPORT

IN presenting this report I regret to record a deficit, though small, in the operations of the Association for the year ending December 31, 1936. As was pointed out in my statement of last year when a deficit was first reported, its occurrence reveals a situation that calls for serious consideration. The work of the Association is steadily expanding but the income is not increasing proportionately. It is evident that it will not be possible for the Association to continue to meet its obligations unless increased revenue is obtained. During the year the expenses in connection with the certification of sanitary inspectors, involved in the holding of examinations in five provincial centres, were met from the fees for the examinations. It is anticipated that shortly this activity of the Association will be self-supporting. Initial expenses, however, have to be met in connection with the preparation and publication of a manual of instruction for sanitary inspectors.

There has been a gratifying increase in revenue from membership fees but a reduction in advertising revenue of the JOURNAL. The valued support of the Canadian Life Insurance Officers Association in the form of a grant of \$1,000.00 towards the work of the Association during the past year has not only made possible the present budget but has been a source of real encouragement to the officers of the Association.

In considering the income during the past year, an increase of approximately \$300.00 is shown in the statement. The expenditures, however, exceeded the income by \$113.00. The deficit in the operations of the Association during 1935 was \$239.61.

As the publication of the JOURNAL represents the major financial expenditure of the Association, the Editorial Board is to be congratulated on making possible the publication of the JOURNAL at practically the same cost as in 1935. During 1936 an increase of 20 per cent. in the cost of postage and mailing charges on magazines had to be met which, with increased costs of paper and printing, presented a serious problem to the Editorial Board. By undertaking practically all proof reading and by limiting authors' changes to a minimum, it has been possible to keep the cost of the JOURNAL at approximately the same figure as in 1935.

As Treasurer I should like to express appreciation of the success of the efforts of the Local Committee on Arrangements responsible for the twenty-fifth annual meeting, held in Vancouver last June, to meet largely the local expenses of the convention. Through the provision of commercial exhibits and the charging of a registration fee, together with a grant from the Province of British Columbia, the meeting was conducted without any expense to the Association. The meeting was one of the largest and most successful that the Association has held and this achievement in financing is all the more notable. The amount, \$145.69, which is charged to convention expense in the appended statement relates to the publication of the annual report of fifty-six pages.

The statement of expenditures by the Association is also unique in that it contains no salaries. The entire work has, as in past years, been conducted through the services of the various officers without charge. For the first four months of last year an office assistant was appointed but due to shortage of funds it was not possible to continue this appointment. I desire to stress the necessity of making provision for a full-time assistant.

Further evidence of the co-operation in carrying on the work of the Association at the minimum cost is presented by the Sections. The Laboratory Section held its annual two-day Christmas meeting, attended by more than one hundred members, published a directory of laboratory personnel, and issued an important bulletin, at a cost to the Association of only \$48.31. Similarly, the Sections of Vital Statistics and of Public Health Nursing financed their undertakings with only a small deficit to the Association.

As to sources of increased revenue, consideration has been given by the Executive Committee to the raising of the annual membership fee from \$2.00 to \$3.00. Since, however, the provincial departments of health of all the provinces co-operate in the work of the Association by enrolling as members all health officers and in some provinces other personnel at the special fee of \$1.00 a year for each member, the Committee after consultation with the provincial departments decided that such an increase in all the provinces would not be possible at the present time. Until it is possible for this special fee to be increased, an increase of the fee for regular members from \$2.00 to \$3.00 would not represent an increase in income sufficiently large to warrant the change. The charging of a registration fee at the annual meetings and the Christmas meeting of the Laboratory Section, as introduced last year, will be of great assistance in financing the annual meetings. As to assistance from governmental sources, I believe that representation should again be made for an annual grant to enable the Association to enlarge its work and to provide secretarial and editorial direction on a salaried basis. As previously stated, the entire work of the Association is conducted without salaried officers and it is too much to expect that all the services necessary for the conduct of this national organization will continue to be given in such a generous manner as to permit the proper conduct of the Association. The new demands of the Association require definite provision for a permanent office and organization.

The Association again has occasion to express its hearty thanks to the Health League of Canada for the use of office space and other facilities, and to the Department of Health of Ontario and the School of Hygiene, University of Toronto, for services similarly rendered and for their continued manifestation of interest. To Mr. Frederick Surphlis I wish to express my hearty appreciation for the detailed work of the treasurer's office, including the maintenance of the membership roll, billing, and bookkeeping.

The audited statements for the year ending December 31, 1936, are appended.

C. P. FENWICK, *Treasurer.*

CANADIAN PUBLIC HEALTH ASSOCIATION
BALANCE SHEET

Exhibit 1

DECEMBER 31, 1936

Current Assets

Cash on hand and at Bank	\$ 384.39	
Accounts Receivable—Advertising	\$468.07	
Subscriptions	130.25	
Reprints	356.20	
Miscellaneous	6.70	
Total	\$961.22	
Less: Reserve for Doubtful Accounts	194.18	
		767.04
Deposit with Postmaster		15.00
TOTAL CURRENT ASSETS		\$1,166.43

Investments

Province of Ontario Bonds—at Cost	1,012.50
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Fixed Assets

Canadian Public Health Journal	\$1,000.00	
Office Equipment	\$ 35.00	
Less: Depreciation Provided	7.00	28.00
TOTAL FIXED ASSETS		1,028.00
TOTAL ASSETS		\$3,206.93

LIABILITIES AND SURPLUS

Current Liabilities

Accounts Payable	\$ 474.81	
Accrued Commissions & Expenses	26.48	
Prepaid Subscriptions	377.37	
TOTAL LIABILITIES		\$ 878.66
Surplus—January 1, 1936	\$2,441.36	
Deduct: Deficit for year ended December 31, 1936	113.09	
SURPLUS—December 31, 1936		2,328.27
TOTAL LIABILITIES & SURPLUS		\$3,206.93

CERTIFICATE

We have audited the books of account of the CANADIAN PUBLIC HEALTH ASSOCIATION for the Twelve Months ended December 31, 1936, and we hereby certify that the above Balance Sheet and the appended Statement of Income and Expenditure are in our opinion properly drawn up so as to exhibit a true and correct view of the Association's affairs as at December 31, 1936, according to the best of our information, the explanations given us, and as shown by the books of the Association.

TORONTO, MAY 6, 1937.

(Signed) SEBURN, FERGUSON & BAKER,
Auditors.

STATEMENT OF INCOME & EXPENDITURE

Exhibit 2

FOR TWELVE MONTHS ENDED DECEMBER 31, 1936

INCOME

Advertising	\$2,999.31
Subscriptions	2,998.51
Certification of Sanitary Inspectors	257.14
Canadian Life Insurance Officers Association	1,000.00
Miscellaneous Income	148.17
GROSS INCOME	\$7,403.13

EXPENDITURE	
Printing	\$4,611.40
Cuts & Sundries	64.95
Postage on Magazines & Mailing Cost	714.33
Commissions	362.83
Advertising & Promotion Expense	84.28
Discounts Allowed & Bank Exchange	75.02
Reserve for Bad Debts	156.83
Honoraria	488.00
Salaries	192.50
Stationery & Office Supplies	185.00
Postage & Telegraph	258.63
Annual Meeting Expense	145.69
Reserve for Depreciation—Office Equipment	7.00
Miscellaneous Expense	89.01
Laboratory Section Expense	48.31
Vital Statistics Section Expense	15.14
Public Health Nursing Section Expense	17.30
TOTAL EXPENDITURE	7,516.22
DEFICIT—for Year 1936—Carried to Exhibit 1.	\$ 113.09

REPORT OF THE EDITORIAL BOARD

THE CANADIAN PUBLIC HEALTH JOURNAL is now in its twenty-eighth volume. This report is the ninth annual report of the Editorial Board constituted in 1928 when the Association assumed the responsibility for the publication of the JOURNAL. At that time it was anticipated that within two or three years the Association would be in a position to appoint an editor and at least one full-time office assistant. Such provision has not yet been made possible. The JOURNAL has been published and all the editorial work associated therewith, even to the assumption of the preliminary proof-reading in order to minimize the cost of publication, has been undertaken by various members, utilizing their own office personnel and arranging for a large part of the conduct of the work out of regular hours.

It is gratifying to the Editorial Board to receive expressions of appreciation of the value of the JOURNAL from a number of university departments in European countries as well as from the United States and Canada. The Editorial Board, however, is very conscious of the improvements that might be made in the JOURNAL and of the greater service that it might render if reasonable financial support was available to permit of adequate time being given to its planning and preparation. It is only when it is realized that the JOURNAL each year represents a volume of more than 600 pages of scientific articles and editorials, comments and reviews, that the need for editorial direction and assistance free from other responsibilities is appreciated. At the present time these responsibilities must be assumed as well as the responsibility for the financing of the publication through the solicitation of advertising, the collection of subscription fees, and the attendant correspondence. The need for

at least full-time office assistance has been very evident and it is unreasonable to expect that the Editorial Board should continue to attempt to assume these duties without such assistance. This matter is referred to by the Treasurer in his report and it is hoped that this year provision can be made for this need.

EDITORIAL POLICY. In publishing the JOURNAL the attempt is being made to provide for medical officers of health and other members of health departments a journal that may be considered practical and of general interest. More than 95 per cent. of the medical officers of health are practising physicians. The effort is therefore being made to present from time to time clinical material relating to subjects of concern in preventive medicine. It is remembered also that the Association has nine Sections, composed of members whose interests are in special fields. Unless the JOURNAL is able to publish frequently articles in these special fields, the members are apt to feel that the JOURNAL has little to interest them. Several of the Sections present a series of important contributions that are, however, highly technical. To meet this situation, the Editorial Board arranged for the publication in abstract form of all the papers presented at the Christmas meeting of the Laboratory Section. It is desired, however, to publish, when funds are available, a larger number of technical papers representing original research, without reducing the present number of general papers. The Section of Vital Statistics and Epidemiology has from time to time numerous papers which should be published promptly but which, under present circumstances, must be distributed through the year and published as occasion permits. The primary purpose of the JOURNAL is to be of service to those who are in administrative health work and so assist in the movement toward more efficient local health administration. In the final analysis, this is dependent on the publication of new original work and the co-operation of those who are engaged in the special fields.

During 1936 seventy-seven articles and twenty-six editorials were published. Fifty books were reviewed and thirty-four articles published in other journals were abstracted. The *Letter from Great Britain* appeared four times; the department of *Association News*, nine times; *Current Public Health Comment*, three times; *Plans, Programs, and Progress*, seven times. In addition sixty pages were devoted to reports from the annual meeting. The new department, *Plans, Programs, and Progress*, was introduced in February to provide for the publication of short contributions on the various aspects of the work of local health departments. The other new section, *Current Public Health Comment*, featured three articles by Dr. P. A. T. Sneath on the subjects of health insurance and housing. Again the Board had reason to be deeply grateful to Dr. George F. Buchan, Medical Officer of the Willesden Urban District Council, Kilburn, London, for his kindness in continuing to prepare the quarterly letter on public health developments in Great Britain. This letter has become one of the features of the JOURNAL.

CIRCULATION. For the twelve months ending December 31, 1936, the average monthly distribution, as audited in accordance with the requirements of the Canadian Circulations Audit Board, was 3,255 copies, as compared with

3,129 in 1935, showing an increase of 126 copies a month. It is interesting to recall that when the Association assumed responsibility for the publication of the JOURNAL in 1928 the circulation was only 1,500. During 1936, 2,073 copies went each month to physicians; 325 copies to public health nurses; 232 copies to other public health workers: laboratory directors and technicians, engineers, statisticians, and others; 189 copies to the leading scientific libraries in Canada, the United States, and Europe; 64 copies to the larger hospitals in Canada; and the remainder, 346 copies, to companies, institutions, newspapers, exchange journals, etc.

In 1936 approximately 125 medical students and nurses in training in the various Canadian universities subscribed for the JOURNAL on the special basis which was introduced in 1932. Although the amount of the subscription, one dollar for two years, does not cover one-third of the printing and mailing charges, the Editorial Board believes that it is an important part of the Association's work thus to make the JOURNAL available as a supplement to the instruction in preventive medicine and hygiene in the various faculties.

ADVERTISING. Serious efforts have been made since the Association assumed publication of the JOURNAL nine years ago, to present the merits of the JOURNAL as an advertising medium to national advertisers. Advertising has been solicited solely on the value of the JOURNAL to the advertiser. As a result of this strictly business basis, the JOURNAL has now twenty-four companies and institutions as regular advertisers. No advertising is accepted that does not meet with the approval of the committee. The JOURNAL is represented in England by a well-known advertising company and last year Major V. W. Dyas was appointed advertising representative in Canada. The JOURNAL has an excellent reputation among the advertising agencies. It has been the policy of the committee to have the circulation audited each year since its publication was assumed by the Association. A very considerable amount of work is entailed in keeping the JOURNAL before a group of almost 200 advertisers. A special file folder containing a copy of the audited circulation statement, an analysis of the distribution, and other data concerning the JOURNAL was sent in January of this year. Supplementary material for insertion in the folder was forwarded in May and further material will be mailed from time to time. As a number of medical advertisers confine their advertising to medical journals which have no non-medical circulation, a considerable volume of medical advertising is not available to the JOURNAL. Further, the curtailment of municipal undertakings in engineering during the past years has prevented companies that are concerned with municipal sanitation from making announcements.

Several new advertising accounts were obtained during the year but owing to the withdrawal of the announcements of one of the provincial departments of health a net reduction of \$226.91 was recorded.

As in past years, the continued publication of the JOURNAL has been made possible by the co-operation of the executive officers of the nine provincial departments of health. Without this co-operation and the continued evidence of their interest and help, the Editorial Board would not have been able to

carry on their responsibilities. Reference has been made by the Treasurer to the consideration given by the provincial departments of health to the matter of increasing their financial support and their willingness to do everything possible to strengthen the JOURNAL.

In concluding this report, I wish particularly to express appreciation of the contribution made to the JOURNAL by Mr. Robert L. Randall. Commencing his duties as Editorial Assistant four years ago, he has accepted each year increasingly important responsibilities in the preparation and publication of the JOURNAL. These responsibilities have been discharged with the greatest credit not only to himself but to the whole Association. The Editorial Board is indeed fortunate in having such an able assistant.

R. D. DEFRIES, *Chairman.*

REPORT OF THE COMMITTEE ON ARCHIVES 1936-37

IT is with deep regret that the Committee on Archives reports the loss by death of the following members during the past year:

- Dr. W. R. Alway, Medical Officer of Health, Townsend Township, Waterford, Ontario.
- Dr. George Whitman Bailey, Medical Inspector of Schools for New Brunswick, Fredericton.
- Dr. J. A. Baker, Medical Officer of Health, Gore Bay, Ontario.
- Dr. J. A. Bell, Medical Officer of Health, Sarnia, Ontario.
- Dr. F. J. Cawthorpe, Medical Officer of Health, Tavistock, Ontario.
- Dr. J. Campbell, Medical Officer of Health, Tottenham, Ontario.
- Dr. Alexander N. Chisholm, Medical Officer of Health, Port Hawkesbury, Inverness County, Nova Scotia.
- Miss Muriel Claxton, R.N., P.H.N., Cecil Lake, Peace River Block, British Columbia.
- Dr. C. H. Dumais, Riviere-du-Loup, Quebec.
- Miss Isobel M. Galbraith, Reg.N., Public Health Nurse, Peel County School Unit, Brampton, Ontario.
- Dr. J. S. Goodfellow, Medical Officer of Health, Morrisburg, Ontario.
- Dr. J. D. Macdonald, Medical Officer of Health, Ingersoll, Ontario.
- Dr. P. B. McGibbon, Medical Officer of Health, Bracebridge, Ontario.
- Dr. G. A. McQuibban, Medical Officer of Health, Peel Township, Ontario.
- Dr. W. M. Mather, Medical Officer of Health, Tweed, Ontario.
- Dr. H. Maw, Medical Officer of Health, Caledonia, Ontario.
- Dr. W. J. Milne, Medical Officer of Health, Blyth, Ontario.
- Dr. W. Montgomery, Medical Officer of Health, Embro, Ontario.
- Miss Nora Moore, Reg.N., Director, Division of Public Health Nursing, Department of Public Health of Toronto (Chairman, Public Health Nursing Section, 1932).
- R. H. Murray, Esq., C.E., Director, Division of Sanitation, Department of Public Health of Saskatchewan, Regina (Chairman, Committee on Milk Control).
- Dr. R. W. Rooney, Medical Officer of Health, Orangeville, Ontario.
- Dr. A. D. Smith, Medical Officer of Health, Logan Township, Ontario.
- Dr. D. A. Stewart, Medical Superintendent of the Manitoba Sanatorium, Ninette.
- Dr. G. E. Syer, Medical Officer of Health, Milton, Ontario.
- Dr. J. B. Whitely, Medical Officer of Health, Goderich, Ontario.
- Dr. S. N. Young, Medical Officer of Health, Ridgetown, Ontario.

The passing of these members constitutes a serious loss to the Association and to the communities in which they served.

HISTORY OF THE DEVELOPMENT OF PUBLIC HEALTH IN CANADA

The Committee desires to express appreciation of the efforts to have prepared by the provincial medical officers or other representatives, suitable outlines of the development of public health in each province. Through the co-operation of the Department of Pensions and National Health, Dr. J. J. Heagerty, whose work in medical history is so well known, prepared two articles for publication in the JOURNAL on the development of public health in Canada and the organization of the federal Department of Health.

This effort on the part of the Editorial Board has stimulated further study by several of the provincial departments. Dr. P. S. Campbell, Provincial Medical Officer of Health, and Dr. H. L. Scammell, Medical Superintendent, Victoria General Hospital, Halifax, have been engaged for several years in gathering essential information from the early records in Nova Scotia as relating to public health. This has entailed a great deal of work and it has not been possible for them to complete their article. Material for a series of articles has been obtained and their findings will be recorded in the CANADIAN PUBLIC HEALTH JOURNAL and other journals.

The Committee is indebted also to Dr. R. D. Defries for undertaking a study of the work of Dr. Edward Playter who, as early as 1874, undertook the publication of public health journal in Canada and for more than twenty years pioneered in organizing support for public health work, both federal and provincial. His work culminated in the organization of an association in 1893 which in its plan purposed to do what the Canadian Public Health Association later undertook. Although the association organized by Dr. Playter did not go beyond the organization stage, yet the effort had a very definite influence.

G. D. PORTER, *Chairman*; J. D. PAGE, and J. W. S. McCULLOUGH.

REPORT OF THE COMMITTEE ON HONORARY LIFE
MEMBERSHIP

THE Committee has the honour to present as recipients of honorary life membership the names of John A. Ferrell, M.D., New York; George F. Buchan, M.R.C.P., D.P.H., London, England; and Helen MacMurchy, C.B.E., M.D., Toronto.

Dr. Ferrell needs no introduction to public health leaders in Canada. His work is well known to sanitarians from the time he joined the Rockefeller Sanitary Commission in 1910. He was first in charge of the Commission's work in North Carolina, directing an educational campaign against hook-worm. When the Rockefeller Sanitary Commission became the International Health Board, with a world-wide program, Dr. Ferrell was appointed Director for the

United States, and later became Associate Director of the International Health Division of the Foundation. He has contributed very considerably to the development of the policies of the Division that have been so important in the development of state and county health work in the United States and in full-time health services in Canada. Dr. Ferrell has visited every provincial department of health in Canada and has followed closely the progress that has been made, rendering through the Rockefeller Foundation assistance that has been of the greatest importance. The Association is indeed honoured by Dr. Ferrell's acceptance of this expression of its appreciation. In 1931 he was elected President of the American Public Health Association and has continued to serve as Chairman of the Executive Board.

Dr. George F. Buchan is one of the outstanding public health leaders in Great Britain. He has served as Medical Officer of Health of the Borough of Willesden since 1912, which department is recognized as one of the most effectively organized in England. In the London School of Hygiene and Tropical Medicine he holds the important lectureship of public health administration and practice and is lecturer in public health in Guy's Hospital Medical School. He has taken an active interest for many years in the training of sanitary inspectors and in the work of the Royal Sanitary Institute. On a number of occasions he has been honoured by the Royal Sanitary Institute, the American Public Health Association, and the Society of Medical Officers of Health of Great Britain. Dr. Buchan is known to the members of the Canadian Public Health Association through the valuable quarterly letters recording developments in public health in Great Britain which he has generously contributed to the *Canadian Public Health Journal* for the past four years.

Dr. Helen MacMurchy has the distinguished honour of being one of the pioneers in the development of mental hygiene and child welfare in Canada. In 1906 Dr. MacMurchy was appointed Inspector of the Feeble-minded in the Department of the Provincial Secretary in Ontario and for fourteen years she rendered outstanding service, focusing attention upon the problem of feeble-mindedness and mental defectives. At the same time she took an active interest in the development of auxiliary classes, of which she was the first inspector in Ontario under the Department of Education, in the problems of prisons and public charities, and in the efforts for child welfare. In 1920, following the organization of the federal Department of Pensions and National Health, Dr. MacMurchy was selected as the Director of the Division of Child Welfare. Retiring from this office in 1934, she has devoted her time to the preparation of a number of scientific articles and books which, with scientific papers and popular articles previously published, have been a contribution of great value in the advancement of the special fields to which her interest has primarily been given. Few in Canada have done more for the promotion of child welfare than has Dr. MacMurchy and she is recognized as one of the best informed advocates of social and racial betterment.

J. T. PHAIR, *Secretary, Executive Committee.*

LETTER FROM GREAT BRITAIN

GEORGE F. BUCHAN, M.D., F.R.C.P., D.P.H.

London

SINCE I dispatched my last letter in the month of February many publications of great public health interest in this country have been published. The Annual Report of the Medical Research Council for 1935-36 appeared in February. A Report was issued by the London County Council on its Hospital Service in the same month. The First Report of the Advisory Committee on Nutrition was published in March. The Physical Training and Recreation Bill was introduced into the House of Commons in March. A Ministry of Health Report on an Investigation into Maternal Mortality was presented by the Minister of Health to Parliament in April and in May the Minister of Health issued a Circular on Maternal Mortality to Local Authorities based on the Report.

MEDICAL RESEARCH

PARLIAMENT provides a grant in aid of medical research of £165,000 per annum to be administered by the Medical Research Council. The present report deals with many well-worn but as yet ill-understood subjects such as influenza, nutrition and childbed fever. It, however, places in the forefront of its work for the year the matter of clinical research. The late Lord Moy-nihan always contended that the man engaged in clinical research had a much more difficult job than the man engaged solely in laboratory investigations. Reference is made in the report to the munificent gift of £2,000,000 by Lord Nuffield to the University of Oxford for research and post-graduate teaching in medical science and indicates the influence that this gift is likely to have on the policy of the Medical Research Council which is to establish as opportunity offers

and resources permit positions in the service of the Medical Research Council for whole-time clinical research. Experience has shown that research in clinical medicine and surgery is greatly handicapped by the fact that careers in these subjects are too closely dependent on success in private professional practice. The tendency has therefore been for promising clinical investigators to become increasingly absorbed by the claims of practice. So far as research is concerned the Council desire to overcome this tendency and have given special attention during the year to the training of young clinicians with a view to academic and research appointments. They have therefore instituted a series of post-graduate studentships and research fellowships of which the first awards have now been made. The object of these studentships and fellowships is to encourage medical graduates of special ability and original mind to become investigators in those branches of medical science which are concerned directly with disease as it occurs in human beings. This policy of the Medical Research Council will, I am sure, meet with the wholehearted support of the medical profession of this country and should be the means of ascertaining and securing the best forms of clinical practice.

HOSPITALS

A REPORT on London Hospitals issued in February last deals with the three years 1934-36. It is not a long report but it gives an idea of the vast amount of work with which the London County Council is faced. Following upon the passing of the Local Government Act of 1929 the London County Council took over the then existing poor-law hospitals and since

that time have been endeavouring to bring these hospitals up to modern standards. They have gone a long way towards improving both the buildings and staff accommodation and the personnel of these hospitals but the improvement and development have not been nearly so rapid as the Council desire, mainly on account of the time which it takes to prepare the plans, issue and accept tenders and carry out the work. During the six years ending 1936 the London County Council had estimated to spend a total sum of £2,721,200 but actually spent only £1,296,189.

Special mention is made of the increase in the number of confinements taking place in London County Council Hospitals and attendances at the antenatal clinics. The pathological service now provided is also worthy of note. There are group laboratories each of which undertakes important pathological investigations for a group of hospitals as well as hospital laboratories in which the simpler pathological examinations are carried out on the hospital premises.

The aim of the London Authority is to provide as speedily as possible for the citizens of London the best hospital service obtainable and adequate in every way. Substantial achievement in this direction can be recorded and their endeavour to secure their aim is well illustrated by the fact that they now provide for the maintenance of the hospitals under their charge a sum of £5,000,000 per annum.

NUTRITION

THE FIRST Report of the Advisory Committee on Nutrition is a document of considerable importance. The Committee was appointed in 1935 by the Minister of Health and the Secretary of State for Scotland to enquire into the facts, quantitative and qualitative, in relation to the diet of the people and to report as to any changes therein which appeared desirable in the light of modern advance in the knowledge of nutrition. The Committee

have taken a wide view of these terms of reference and are in process of making a comprehensive survey, statistical and physiological, of the diet of the whole nation. This is, I believe, the first occasion in history in which such a national study has been made. The conclusion of the Committee on the information already in their possession is that the national dietary contains sufficient energy-giving foods for the whole population; that there is no aggregate deficiency of fat in the national dietary; nor is any shortage of total proteins revealed by a consideration of the national food supply. They conclude, however, that nevertheless a small fraction of the population are not obtaining the full amount of calories they require nor their full quota of fat and that there is probably some shortage of animal protein in the diets of the poorest section of the community. The Committee urge an increased consumption of milk and record their view that from the health standpoint there is no other single measure that would do more to improve the health, development and resistance to disease of the rising generation than a largely increased consumption of safe milk, especially by mothers, children and adolescents.

The Committee approve the recommendations set forth in the Report of the Technical Commission of the League of Nations on the Physiological Bases of Nutrition.

It is interesting to observe that the Committee are unable to recommend any method of assessing the state of nutrition as reliable and consider that research should be conducted with a view to establishing, if possible, a reliable test or group of tests. To my mind this is very important but so far we appear to be still a long way from any test by which the state of nutrition can be assessed. Perhaps the clinical research to be undertaken by the Medical Research Council may ultimately lead to some more positive standard than we now possess.

The whole report is interesting not

only on account of the knowledge it utilises but because also it indicates the many gaps in our knowledge of nutrition and of national food supplies. Further reports from this Committee will be looked forward to with great interest as they state they are conducting further investigations of such subjects as the distribution of the national income by income groups, family budget material and quantitative dietary studies.

PHYSICAL TRAINING AND RECREATION

THIS BILL, which was introduced into Parliament in March last, contains proposals designed to increase the facilities for physical training and recreation and allied social activities. Capital grants will be given in aid of the provision of gymnasias and gymnastic equipment, together with changing rooms and shower baths and any associated club or community centre accommodation. Grants will also be payable in respect of playing fields, swimming baths and other facilities for physical training or recreation. It is also proposed to provide a national college of physical training for the primary purpose of the training of teachers and leaders to organise and undertake physical and recreational training. The capital expenditure involved is estimated at £2,400,000, with, in addition, an annual expenditure of £170,000.

The whole object of the Bill is to increase physical fitness and to use physical training for the promotion of character as well as the improvement of physique. It is difficult to delimit the agencies which are at work to improve physical fitness as these agencies include child welfare clinics, the school medical service, the feeding of necessitous school children and the like, but no doubt when the Bill becomes law, regulations will be issued defining the conditions under which and the purposes for which, capital grants or annual sums will be allotted.

MATERNAL MORTALITY

THE REPORT issued in 1937 is the latest of a long series of reports which have been published in this and many other countries dealing with this subject. The puerperal mortality rate in Britain remains at a figure of about 4 per thousand and has so remained for many years. The present investigation was instituted to ascertain, if possible, the reason or reasons why certain areas in England during the decade 1924-33 had experienced an average puerperal mortality rate in excess of 5 per thousand live births while other areas for the same decade had a relatively low maternal mortality rate. The Report does not completely account, if indeed it accounts at all, for the differences in the puerperal mortality rates in the various communities. Nevertheless the Report is of great value and much useful information has been obtained which will certainly help towards the elucidation of the maternal mortality problem and it may be hoped to assist its reduction.

The Report emphasises the need in connection with maternity work of improving the standard of obstetrics. Particularly it is recommended that there should be an adequate service of consultants. Under the rules of the Central Midwives Board at present a midwife is required to call in the doctor chosen by the patient to assist in any difficulty or emergency with which the midwife may be confronted. The present Report recommends that in future steps should be taken to ensure that the best local obstetric skill is made available in all cases in which midwives are required to call in a doctor. From the point of view of the medical profession as a whole this proposal is not likely to be welcomed but medical practitioners may be mollified by the suggestion in the report that the best local obstetric skill should be nominated by the local supervising authority in consultation with the local medical profession. All doc-

tors are not expert obstetricians and the opportunities for their gaining sufficient experience in obstetrics is becoming less and less in this country where the tendency is for pregnant women to go into hospitals or other institutions for their confinements. Indeed it is the case that the demand for hospital confinements is far in excess of the beds available.

Another recommendation is that there should be emergency units or "flying squads" established whereby members of the staffs of maternity hospitals will be available for the domiciliary treatment of maternity patients whose condition is too grave to justify their removal to hospital. It may be that this provision may save a life now and then but it may be questioned if it is the best method of being ready to deal with an emergency. Certainly a woman who goes to hospital for her confinement has all the advantages of the "flying squad" or even more at her service without the "squad" having to "fly" at all.

The Report recommends the provision of properly constructed, adequately equipped and suitably staffed maternity accommodation to meet the

needs of every area. It emphasises the need for providing a sufficient number of beds reserved for ante-natal patients. There are a number of other recommendations in this Report which are of importance but I have mentioned those that are given prominence, although in this particular subject of the care of maternity, there is no provision that is not important or can be overlooked. I would therefore commend this Report on an Investigation into Maternal Mortality to my colleagues as one which brings up to date all the knowledge that we in this country possess of the subject and of the methods which are likely to help its reduction.

The Minister of Health, the Right Honourable Sir Kingsley Wood, M.P., has taken a deep interest in maternal mortality and with characteristic promptitude has issued a Circular dated 7th May 1937 to Maternity and Child Welfare Authorities. He urges them to take every aspect of the Report into consideration and to bring their existing arrangements up to the standard which the Report suggests. The action of the Minister gives a new impetus to the subject and it is hoped that it will bear fruit.

CURRENT HEALTH LITERATURE

These abstracts are intended to direct attention to articles that have appeared in other journals during the past month. Any of the journals referred to may be borrowed for three days or longer if desired. Address requests to the secretary of the Editorial Board.

Heat Disease: A Clinical and Laboratory Study

THIS paper comprises a clinical and laboratory study of 184 cases of heat disease occurring among men employed before furnaces in the manufacture of steel. Case histories are given of 13 of the severest cases. A control group of 50 individuals was included in the study.

The authors found that cases of heat disease could be classified clinically into three groups: (1) heat cramps, (2) heat exhaustion, and (3) heat retention. The clinical signs and symptoms of each type are described, and correlated with these are the laboratory findings. The important etiological factors in each type appeared evident from this study and a rational therapy was worked out.

The subject is considered far from closed and further lines of investigation of this very interesting problem are indicated.

M. W. Heilman and E. S. Montgomery, J. Indust. Hyg. & Toxicol., 1936, 18: 651.

Standards for Determining the Suitability of Bile Specimens for Detection or Release of Typhoid Carriers

INVESTIGATION of certain characteristics of bile specimens was undertaken by the authors with the hope of increasing the reliance to be placed upon negative specimens from suspected typhoid carriers. The work was prompted by the fact that bile specimens have frequently shown the presence of typhoid organisms in individuals repeatedly faeces-negative.

Factors taken into consideration were: methods of duodenal intubation,

colour, turbidity, viscosity, and pH of specimens and bacteriological findings. From their results the authors conclude that: "Maximum confidence may be placed in a negative laboratory report on bile obtained in connection with the diagnosis and release of carriers, provided the specimen is amber, clear, viscous, and alkaline, provided it has been obtained following stimulation with magnesium sulphate and provided it has been protected on its way to the laboratory in buffered broth."

Filip C. Forsbeck and Harriett C. Hollon, Am. J. Pub. Health, 1937, 27: 253.

Practical Value and Significance of the Complement-Fixation Reaction in Amoebiasis

THE authors call attention to the work of previous investigators of this subject and present their own experimental findings on animals and humans. From this study they conclude that the complement-fixation test is of practical value in detecting obscure cases of amoebiasis and in following the effect of treatment. A positive reaction becoming persistently negative on treatment would indicate cure. The occurrence of *Endamoeba histolytica* in the stools of a number of humans and in certain experimental animals, without symptoms and with a negative complement-fixation reaction, is taken as evidence that the parasite was present only in the lumen of the gut and had not invaded the tissues. Such cases should, however, be treated with amoebicidal drugs.

A positive complement-fixation reaction should be regarded as only presumptive or confirmatory evidence of amoebic infection and should not replace diligent search for the parasite in the stools.

Henry C. Meleney and William W. Frye, Am. J. Pub. Health, 1937, 27: 505.

